

GRADUATE ASSISTANT
WORKLOADS AND ACADEMIC TASK PREFERENCES

BY

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TABLE OF CONTENTS

	PAGE
ACKNOWLEDGEMENTS.....	ii
LIST OF TABLES.....	v
ABSTRACT.....	ix
CHAPTER	
I	
INTRODUCTION.....	1
Statement of the Problem.....	2
Purpose of the Study.....	7
Need for the Study.....	8
Limitations.....	11
Definitions.....	12
Organization of the Study.....	15
II	
REVIEW OF THE LITERATURE.....	16
Graduate Assistants.....	16
Faculty Workloads.....	19
Attitudes of Graduate Assistants toward	
Assigned Duties and Workloads.....	29
Characteristics of Academic Departments.....	33
Summary.....	42
III	
METHOD OF PROCEDURE.....	45
General Research Design.....	46
Statement of the Research Hypotheses.....	46
Population.....	48
Instrumentation.....	56
Pilot Study.....	57
Data Collection.....	58
Analysis of Data.....	59
Analysis of Variance (ANOVA).....	60
Discriminant Analysis.....	60

CHAPTER		
IV	ANALYSIS AND RESULTS.....	62
	Introduction.....	62
	Description of the Sample.....	62
	Data Analysis.....	63
	Analysis of Variance.....	63
	Preference for Teaching or Research.....	63
	Job Satisfaction.....	80
	Supervision.....	98
	Summary of the Analyses of Variances.....	117
	Discriminant Analysis.....	119
	Summary of the Discriminant Analyses.....	128
	Summary of the Results.....	129
V	SUMMARY, IMPLICATIONS, RECOMMENDATIONS.....	132
	Summary.....	132
	The Problem.....	133
	The Purpose.....	134
	The Methodology.....	135
	Findings of the Study.....	138
	Implications of the Findings.....	142
	Recommendations for Future Research.....	146
	REFERENCES.....	150
APPENDIX		
A	MEMORANDA REGARDING GRADUATE ASSISTANTS AT THE UNIVERSITY OF FLORIDA.....	155
B	COVER LETTER, QUESTIONNAIRE, ANSWER SHEET, REMINDER LETTER.....	158
C	PILOT STUDY: COVER LETTER, QUESTIONNAIRE, REMINDER LETTERS.....	168
	BIOGRAPHICAL SKETCH.....	178

LIST OF TABLES

TABLE		PAGE
1	Academic Departments at the University of Illinois at Urbana-Champaign Investigated by Biglan.....	5
2	Classification of Academic Departments Using Biglan's Research Findings.....	6
3	Population of Graduate Assistants by Academic Department Investigated at the University of Florida.....	52
4	Classification of University of Florida Academic Departments According to Biglan's Research Findings.....	53
5	Population of Graduate Assistants Who Responded Grouped by Classification.....	55
6	Relationship among Graduate Assistants' Preferences for Teaching or Research, Hard and Soft Sciences, and Hours Worked per Week.	66
7	Relationship among Graduate Teaching Assistants' Preferences for Teaching or Research, Hard and Soft Sciences, and Hours Worked per Week.	67
8	Relationship among Graduate Research Assistants' Preferences for Teaching or Research, Hard and Soft Sciences, and Hours Worked per Week.	69
9	Relationship among Graduate Assistants' Preferences for Teaching or Research, Pure and Applied Sciences, and Hours Worked per Week..	73
10	Relationship among Graduate Teaching Assistants' Preferences for Teaching or Research, Pure and Applied Sciences, and Hours Worked per Week.....	74

11	Relationship among Graduate Research Assistants' Preferences for Teaching or Research, Pure and Applied Sciences, and Hours Worked per Week.....	75
12	Relationship among Graduate Assistants' Preferences for Teaching or Research, Life System and Nonlife System Sciences, and Hours Worked per Week.....	77
13	Relationship among Graduate Teaching Assistants' Preferences for Teaching or Research, Life System and Nonlife System Sciences, and Hours Worked per Week.....	78
14	Relationship among Graduate Research Assistants' Preferences for Teaching or Research, Life System and Nonlife System Sciences, and Hours Worked per Week.....	79
15	Relationship among Graduate Assistants' Job Satisfaction, Hard and Soft Sciences, and Hours Worked per Week.....	82
16	Relationship among Graduate Teaching Assistants' Job Satisfaction, Hard and Soft Sciences, and Hours Worked per Week.....	84
17	Relationship among Graduate Research Assistants' Job Satisfaction, Hard and Soft Sciences, and Hours Worked per Week.....	85
18	Relationship among Graduate Assistants' Job Satisfaction, Pure and Applied Sciences, and Hours Worked per Week.....	88
19	Relationship among Graduate Teaching Assistants' Job Satisfaction, Pure and Applied Sciences, and Hours Worked per Week.....	90
20	Relationship among Graduate Research Assistants' Job Satisfaction, Pure and Applied Sciences, and Hours Worked per Week.....	91

21	Relationship among Graduate Assistants' Job Satisfaction, Life System and Nonlife System Sciences, and Hours Worked per Week.....	94
22	Relationship among Graduate Teaching Assistants' Job Satisfaction, Life System and Nonlife System Sciences, and Hours Worked per Week...	96
23	Relationship among Graduate Research Assistants' Job Satisfaction, Life System and Nonlife System Sciences, and Hours Worked per Week...	97
24	Relationship among Supervision of Graduate Assistants, Hard and Soft Sciences, and Hours Worked per Week.....	101
25	Relationship among Supervision of Graduate Teaching Assistants, Hard and Soft Sciences, and Hours Worked per Week.....	102
26	Relationship among Supervision of Graduate Research Assistants, Hard and Soft Sciences, and Hours Worked per Week.....	103
27	Relationship among Supervision of Graduate Assistants, Pure and Applied Sciences, and Hours Worked per Week.....	107
28	Relationship among Supervision of Graduate Teaching Assistants, Pure and Applied Sciences, and Hours Worked per Week.....	109
29	Relationship among Supervision of Graduate Research Assistants, Pure and Applied Sciences, and Hours Worked per Week.....	110
30	Relationship among Supervision of Graduate Assistants, Life System and Nonlife System Sciences, and Hours Worked per Week.....	113
31	Relationship among Supervision of Graduate Teaching Assistants, Life System and Nonlife System Sciences, and Hours Worked per Week...	115

TABLE

PAGE

32	Relationship among Supervision of Graduate Research Assistants, Life System and Nonlife System Sciences, and Hours Worked per Week...	116
33	Summary of the Analyses of Variances for the Variables Hard/Soft, Pure/Applied, and Life System/Nonlife System Sciences; Preference for Teaching or Research; Job Satisfaction; Supervision; and Hours Worked per Week.....	118
34	Results of the Discriminant Analysis for Graduate Assistants in Hard and Soft Sciences.....	122
35	Results of the Discriminant Analysis for Graduate Assistants in Pure and Applied Sciences.....	124
36	Results of the Discriminant Analysis for Graduate Assistants in Life System and Nonlife System Sciences.....	127

Abstract of Dissertation Presented to the Graduate Council
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By

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The purpose of this study was to test a classification scheme of academic task preferences of faculty as applied to graduate students employed as graduate assistants (GAs). The investigation addressed four research questions concerned with the relationship between GAs from different departments and their preferences for teaching or research, job satisfaction, and satisfaction with supervision. Ten research hypotheses were tested.

A survey instrument, developed for this study, included questions regarding task preferences, supervision from faculty, job satisfaction, and hours worked per week. The population included GAs at the University of Florida during the Fall semester, 1981. Thirty-four departments were chosen for study with a total of 432 usable responses.

The departments were classified as Hard or Soft, Pure or Applied, and Life System or Nonlife System using an earlier study on faculty academic task preferences as a guide. The responses were analyzed using analysis of variance and discriminant analysis.

Results of the study showed:

1. The classification scheme tested was somewhat relevant to GAs.
2. GAs in Hard sciences preferred research activities to teaching.
3. GAs in Applied sciences expressed greater job satisfaction than those in Pure sciences.
4. None of the GAs were receiving what they considered average supervision from departmental faculty.
5. Those GAs working 13 hours per week or less expressed the greatest job satisfaction.
6. GAs could accurately be grouped in Hard or Soft and Pure or Applied academic departments on the basis of questionnaire responses. Results for Life System or Nonlife System departments were less conclusive.

Results of the study showed that GAs had some of the same task preferences as faculty had shown in an earlier

study. Additional results suggested that changes in the way GA workloads were assigned should be made. GAs should be assigned a variety of responsibilities; GAs desire more supervision from faculty; and more realistic expectations of the time spent in assistantship duties should be set. Results of the study also suggested the need for additional research on classification schemes.

CHAPTER I INTRODUCTION

During the next two decades, colleges and universities must prepare to meet the challenges of declining college enrollments, less real dollars for education due to inflation, and a continuing demand for better teaching by student consumers. One common method of stretching educational dollars and of giving potential college teachers an opportunity to gain experience in teaching is the graduate teaching assistantship. In her book Challenges to Graduate Schools, Ann Heiss (1970) stated, "colleges and universities that are too hard-pressed in terms of their staff shortages and financial limitations to hire adequate numbers of experienced teachers should make a frank admission that the graduate assistant serves an important institutional need" (p. 293).

Likewise, the next two decades may show a decrease in the dollars allocated to university research. With less money available for research assistantships, the competition may be greater for those assistantships still available. Many students, who may have wanted to earn an advanced degree, may be unable to do so without the aid of graduate assistantships.

Because of these financial constraints and the desire by many graduate schools and graduate faculties to make the graduate school experience a rewarding and valuable one, educators need to look at the work performed by graduate assistants. Just how much work is performed by graduate assistants on college campuses is unclear. Those who have ventured a guess estimate that 25 to 50% of all undergraduate courses are taught by graduate assistants (Friedrich and Powell, 1979; Fink, 1976-77). No similar estimates of the work of those graduate assistants involved in research have been made.

As the review of literature will show, several authors have been concerned with the workloads of graduate assistants. Heiss (1970), Barella (1976) and Brown (1962) all noted concerns of low stipends, menial tasks, and lack of supervision for graduate assistants. While higher education institutions are relying increasingly on graduate assistants to perform their teaching and research commitments, little research has been conducted in the area of graduate student assistant preferences for various tasks and workloads.

Statement of the Problem

A problem facing higher education is a lack of understanding regarding graduate student assistant workloads and

task preferences. Because there were no studies on graduate assistant workloads, previous studies of faculty task preferences and workloads were used as a model. If the results of the study were statistically rigorous, suggestions for future workload assignments among graduate assistants could be made.

In order to make an inquiry into graduate assistant workloads, the diverse graduate student population and large number of academic offerings available to graduate students needed to be categorized in some manner. Several researchers interested in the workloads of academic faculty (Lodahl and Gordon, 1972, Biglan, 1973(a), 1973(b), Smart and Elton, 1975, 1976) found that there were differences in workload preferences of faculty between Hard and Soft sciences, Pure and Applied sciences, and Life System and Non-life System sciences. These studies of faculty were based on Kuhn's theories of shared paradigms within bodies of scientific knowledge. Paradigms included beliefs, values and techniques shared by a community of scientists. Kuhn had also theorized that some academic disciplines were more mature than others in the development of paradigms.

Biglan (1971) analyzed the four task areas of university work--teaching, research, administration, and

service--along three dimensions. These dimensions were ". . . 1) the objectivity of their methods and criteria, (2) degree of concern with application, and (3) nature of the object studied" (Biglan, 1971, p. 13). Using a variety of data sources which included questionnaires, faculty judgment ratings, archival records, and information from the offices of Institutional Research and Space Programming, Biglan investigated thirty-six academic departments at the University of Illinois at Urbana-Champaign. Table 1 lists those departments.

Biglan found that there was consistency among faculty in distinguishing among disciplines according to the characteristics of Hard/Soft, Pure/Applied, Life System/Nonlife System sciences. Based on his research findings, Biglan classified the thirty-six departments in the study using the Hard/Soft, Pure/Applied, Life System/Nonlife System characteristics. Table 2 identifies that classification scheme. He then investigated the relationships between these characteristics and departmental structure and output. Definite preferences for social relationships, teaching, research and service based on the Hard/Soft, Pure/Applied, and Life System/Nonlife System characteristics were found.

Table 1
Academic Departments at
the University of Illinois at Urbana-Champaign
Investigated by Biglan (1971, p. 37)

Accountancy	History
Agronomy	Horticulture
Agricultural Economics	Mathematics
Anthropology	Mechanical Engineering
Astronomy	Microbiology
Botany	Nuclear Engineering
Ceramic Engineering	Philosophy
Chemistry	Physics
Civil Engineering	Physiology
Communications	Political Science
Computer Science	Psychology
Dairy Science	Russian
Economics	Secondary and Continuing
Educational Administration	Education
and Supervision	Sociology
English	Special Education
Entomology	Vocational and Technical
Finance	Education
Geology	Zoology
German	

Table 2
Classification of Academic Departments
Using Biglan's Research Findings

Task Area	Hard		Soft	
	Nonlife System	Life System	Nonlife System	Life System
Pure	Astronomy Chemistry Geology Math Physics	Botany Entomology Microbiology Physiology Zoology	Communications English German History Philosophy Russian	Anthropology Political Science Psychology Sociology
Applied	Applied Mechanical Engineering Ceramic Engineering Civil Engineering Computer Science Nuclear Engineering*	Agricultural Economics Agronomy Dairy Science Horticulture	Accountancy Economics Finance	Educational Administration and Supervision Secondary and Continuing Education Vocational and Technical Education

From Biglan, 1973b, p. 207.

*Nuclear Engineering did not appear in the chart in the original source, perhaps due to oversight, but the department was part of the original study.

Smart and Elton (1975, 1976) suggested that Biglan's findings were rigorous enough to encourage further research involving people and their academic environments in higher education. "It seems reasonable that further research might reveal broad differences between students and/or faculty in these academic environments in terms of their personal backgrounds, educational and vocational aspirations, cognitive styles, and personality traits" (Smart and Elton, 1975, p. 587).

Purpose of the Study

The purpose of the study was to test Biglan's classification scheme of task preferences of faculty on a group of graduate students employed in various departments as graduate assistants. The study addressed the following research questions:

1. Will graduate assistants in academic departments classified as Hard/Soft, Pure/Applied, or Life System/Nonlife System have significantly different preferences for either teaching or research?

2. Will graduate assistants in academic departments classified as Hard/Soft, Pure/Applied, or Life System/Nonlife System indicate significantly different levels of job satisfaction?
3. Will graduate assistants in academic departments classified as Hard/Soft, Pure/Applied, or Life System/Nonlife System indicate significantly different levels of supervision from departmental faculty?
4. Can various measures of task preferences, job satisfaction, supervision from faculty, and hours worked per week be used to accurately predict group membership in either Hard/Soft, Pure/Applied, or Life System/Nonlife System academic departments?

Need for the Study

In the June 1982 issue of Phi Delta Kappan, Ralph Tyler wrote,

. . . it is unlikely that schools and colleges will receive increased funds during the next several years. The population pyramid of the U.S. has changed. . . . increased expenditures are called for to support health services, the criminal justice system, the costs of measures to reduce pollution, the upgrading of environmental quality, and the

provision of other social services. These new demands are causing the American public to reorder its priorities and to view with alarm greatly increased tax levies. (p. 655)

Somewhat more optimistically, Tyler (1982) also wrote, "During times of material affluence we become engrossed in pursuing dollars; but when dollars are not available we seek, if we are wise, to raise the quality of education and attack some of the serious problems we face" (p. 656).

As dollars for education become increasingly scarce, many colleges and universities will be forced to rely on more graduate assistants to perform the teaching and research functions. Heiss recognized the important role the graduate assistant played on college and university campuses and urged colleges and universities to acknowledge the importance of graduate assistants. Several major universities have already recognized the importance of graduate assistants as these students have earned the right to bargain collectively.

Workloads are an important issue with graduate assistants. While Boulding (1980) noted the apprenticeship nature of assistantships, other authors wrote of the possible exploitation of graduate assistants due to a lack of formal policies. Anderson and Berdie (1972), Heiss (1970), Barella (1976), Brown (1962), and Mayhew (1972) all wrote of the

necessity for providing a positive work experience for graduate assistants. Yet workloads of graduate assistants have not been the subject of any in-depth research studies.

In a Fact-File published by The Chronicle of Higher Education (1982), 1980-81 recipients of doctoral degrees were surveyed regarding their postdoctoral employment. Slightly more than 44% planned to work in an educational institution. Additionally, almost 40% of all doctoral degree recipients expected teaching to be their primary type of work. Another 26% expected research to be their primary work. Clearly, the work graduate assistants perform may be a direct reflection on the type of work they choose following the completion of graduate education.

The graduate assistantship is an important, and sometimes the only, financial support for graduate students. The findings of a survey on earned doctorates reported ". . . that for more than 60 percent of the recipients of doctoral degrees in 1981, the primary source of financial support in graduate school had come from one of three sources: their own earnings, teaching assistantships, or research assistantships" (Scully, 1982, p. 8).

Because of the power graduate assistants are gaining through collective bargaining and the importance graduate assistants hold in meeting the teaching and research

functions of universities, there is a need for institutions to study graduate assistant workloads. Workloads are an important issue with graduate assistants, too, because the assistantship is a primary source of financial support. If the graduate assistantship is a positive experience for the student, then institutions may well encourage the best and brightest to pursue employment in educational institutions following graduation.

Limitations

There were limitations to this study. First of all, the hours worked by graduate students were self-reported. While it was assumed that the reports were accurate, self-reports are always open to criticism. However, the Review of Literature will show that faculty self-reports of time spent in work are most often used in studies of faculty workload. The researcher has assumed the self-reports of graduate students were as accurate as the self-reports of faculty members used by other researchers.

The second limitation was with regard to the population. While the population was sufficiently large and the response rate high for a survey form of research, care should be used in generalizing the results of this study to other university situations.

The third limitation was the attitudes section of the survey instrument. Because published attitude instruments suitable for use with college students were not available, the instrument was developed specifically for this study. Numerous uses of the instrument by other researchers should increase the validity and reliability of the instrument.

Definitions

In this study the following terms were used and defined accordingly:

Graduate Assistant: Graduate Assistant refers to all levels and classifications of graduate students paid to teach or conduct research on behalf of the university.

Teaching: Teaching refers to the sole or partial responsibility of a person in the development, presentation, and evaluation of a formal course of study to those formally enrolled in the course.

Research: Research refers to all tasks associated with the methodological study of a problem, idea, or theory with the intent to advance knowledge in any given field.

Attitude: For the purposes of this study, attitude refers to the responses a graduate assistant gave to questionnaire items regarding work preferences, workload, salary, and office space.

Paradigms: Paradigms are the beliefs, values, and techniques shared by a community of scientists. According to Kuhn, a field of science is one in which there are paradigms accepted by a community of people as a foundation for further research.

Academic Department: Within a college or university those knowledgeable in a given field of science are divided into academic departments. These departments consist of people who share the responsibilities for research, service, and teaching. Academic departments are individually administered units and the chairperson of the department is usually well-known for his expertise in the particular field of science.

Hard Sciences: Hard sciences are those sciences which have a high level of paradigm development. In those sciences there is agreement on " . . . the appropriate problems for study and the appropriate methods to be used" (Biglan, 1973a, p. 195).

Soft Sciences: Those sciences which do not have a high level of paradigm development are Soft sciences. There

is much disagreement among scholars in the field as to which problems are appropriate for study and what methods of research should be used.

Pure Sciences: Those sciences in which the greatest contributions come from the facts learned through research are called Pure sciences. While the knowledge learned through research may have practical applications, scientists are most concerned with laws, principles and facts that add to the body of knowledge within the field.

Applied Sciences: Applied sciences are those sciences in which the greatest contribution to the body of knowledge is derived from practical application. Practical applications may show the need for more research but the goal of that research is application to specific problems in the field.

Life System Sciences: Sciences in which living objects are the focus of study are called Life System sciences.

Nonlife System Sciences: Nonlife System sciences have little concern with the study of living objects.

Organization of the Study

In this chapter the statement of the problem, purpose and need for the study, limitations, and definitions of terms were presented.

Topics reviewed in Chapter II are graduate assistants, graduate assistant attitudes, faculty workloads, and the characteristics of academic departments.

Chapter III discusses the method of procedure used in this study. A description of the population, development of the instrument, and procedures for data analysis are also included.

In Chapter IV the findings of the study are presented and discussed.

Conclusions drawn from the results of this study and recommendations for future research are found in Chapter V.

CHAPTER II REVIEW OF THE LITERATURE

Before beginning this study, research in the following areas was investigated: graduate education, graduate assistants, graduate student workloads; attitudes of graduate students toward their graduate education, workloads, and careers; faculty workloads; and the varying characteristics of academic departments. As the review will show, little attention has been paid to the workloads of graduate students by other researchers other than to mention it in peripheral ways.

Graduate Assistants

One particularly optimistic view of graduate assistantships was stated by Boulding (1980) who noted one strength of graduate education was its operation as a system of apprenticeship.

The graduate student mainly learns to teach by apprenticeship, and it is a rare graduate program where the prospective university teacher gets any formal instruction on how to teach. In research, also, there is a strong element of apprenticeship in many Ph.D. programs . . . where the candidate is in effect a glorified research assistant to the

professor and his Ph.D. emerges out of a combination of the candidate's and the professor's research. (p. 145)

In a 1972 survey of graduate assistants at the University of Minnesota (Anderson and Berdie, 1972), several questions relating to workload were asked. On that campus, one-half and one-quarter time assistantships were the most prevalent. Teaching assistants on one-quarter time appointments reported working from 0 to 58 hours per week with an average of 10 hours per week. Research assistants, also appointed to one-quarter time assistantships, reported working an average of 13 hours per week. Both faculty and department chairpersons stated that they required more hours of research assistants than of teaching assistants.

The authors suggested that research assistants were more open to exploitation because of the lack of formal policies regulating their positions. Research assistants were more likely to be required to work over quarter breaks but were also more likely to be appointed for a one year period rather than on a term-by-term basis. In an open-ended comments section on the questionnaire, only 2% of the responding graduate assistants commented on the need for smaller workloads, smaller classes, more secretarial support, and improved office space.

In discussing the ten major universities included in the Heiss study (1970), workloads of graduate assistants

were referred to in a peripheral manner. Heiss noted that graduate students were often required to perform routine tasks that were of little value to the development of the student, stipends paid to graduate students were inadequate, there was a lack of supervision or training of graduate assistants, and graduate assistants were sometimes assigned duties and responsibilities in an unplanned or haphazard manner. Barella (1976) noted similar problems for graduate assistants. In a survey of 653 graduate assistants at an Ivy League institution, Brown (1962) discussed similar problems noted by Heiss and Barella including routine and menial work, the number of working hours required by the university, and the amount of stipend paid graduate assistants.

Lewis Mayhew (1972) wrote of needed reforms in graduate schools embracing such areas as the development of graduate students into good researchers and teachers and the developmental needs of graduate students. Mayhew wrote of six developmental needs which included (1) academic-conceptual (theories, subject matter), (2) esthetic-artistic (feelings, sensitivity), (3) people-oriented activity, (4) inanimate man-made machines, computers, (5) motoric expression, and (6) art of sociability. Mayhew implied that the often menial work performed by graduate assistants with no opportunity to learn or practice skills as a teacher or

researcher were of little benefit to the graduate student, professionally or developmentally.

The literature does show a concern for the workloads of graduate assistants. Low stipends, menial tasks and lack of supervision were the concerns of several authors. However, there did not seem to be any studies concerned with statistical analysis of task preferences or workloads of graduate student assistants. Because of the apprentice nature of assistantships, as Boulding (1980) pointed out, the assumption that many graduate students will choose careers in academia, and the already important role in teaching and research performed by graduate students, a review of the literature on faculty workloads seemed appropriate. Studies of faculty workloads may have a transferral quality that will be useful to a study of graduate assistant workloads.

Faculty Workloads

In one of the earliest comprehensive studies of instructional load, Melvin Haggerty (1937) studied the faculty of 57 higher education institutions in consideration of revisions of standards for the North Central Association of Colleges and Secondary Schools. Haggerty noted that due to increases in enrollment and expected institutional activities, college faculties and administrators were concerned

with efficiency of instruction. Standards for instructional loads set by the North Central Association at that time were for no more than the equivalent of 16 recitation hours per week and no more than 30 students per class (excluding lectures). The class-size standard was eliminated during the period of this study because it was generally disregarded by member institutions.

In the survey, Haggerty found that the average college teacher spent approximately 40 clock-hours a week in instructional duties with about 17 hours spent in class, more than 12 spent in preparation for class, 4 hours devoted to student conferences, and more than 6 hours spent in reading. Other activities required of faculty (research, administration and public relations) were not included. The average college teacher taught 13.5 credit-hours. Haggerty also noted that there were differences in the average number of credit-hours taught among different departments but the total clock-hours spent per week were similar across departments.

In the continuing discussion of faculty workloads, Richards (1950) suggested that a ratio of out-of-class work to contact hours of instruction might be a more realistic measure of workload, particularly if that ratio were used

with other known factors such as class size, number of preparations required, and teaching methods used. Ellison (1958) related the feelings held by faculty about workloads with morale. He suggested that the pressures exerted on faculty to keep up with their professions and counsel students could be somewhat alleviated if faculty members felt their efforts were adequately recognized.

In a paper prepared for use by participants attending a 1960 conference on faculty workloads, Sticklers (1960) reviewed the methods used to measure faculty workloads. Most commonly used measures at that time included credit hours, student credit hours (sum of the number of students per class times the credits per class), student contact hours, and total clock hours. Sticklers also briefly discussed factors that may influence workload including the size of the institution, the rank of the faculty member, class size, type of class (lecture, laboratory, etc.), student-teacher ratios, subject matter taught, level of instruction, presentation method, and previous experience. Stickler noted the lack of research on workloads, particularly regarding research and direction of graduate student work. He concluded:

. . . [the] problem of faculty load has been more than somewhat neglected. There was a reasonable amount of research activity in this area during the twenties and thirties, but very little serious work was done on the problem

during the forties and early fifties. During the past few years there has been a flurry of activity on the subject, but in my judgment it has been largely inconsequential. Most of it has been of the "we-do-it-this-way" variety. (Sticklers, 1960, p. 91)

Stecklein (1961) suggested two methods of measuring workloads, each with advantages and disadvantages. One method used the average number of hours spent by an individual. Stecklein believed there was a tendency to inflate the number of hours worked and that this method was difficult for the researcher to compile. A second method suggested by Stecklein was to estimate the percentage of time spent. While this method assured that the same base was used by all respondents, the ability to estimate and compare input across departments was lost.

Howell (1962) reported on a point system that was developed at Northern Illinois University for use in calculating workloads for faculty. Statistical testing of the system showed that the distribution of points took on a normal curve and 50% of the point scores were within the central range of the curve. The author noted that faculty activities may have been overlooked. There were few opportunities to distinguish among differing departmental or subject matter requirements nor were experience of the faculty person, research activity, or course preparation

requirements included in the point system schedule. Adams (1976) experimented with a similar point system with several of the same caveats noted.

Another accounting of a type of point system for measuring workload was reported by Shay (1974). This system was developed as a result of the unionization of faculty at the University of Rhode Island. Shay reported that it was decided not to measure workload in hours on the job because it was believed that the public would not accept the accuracy of the measure or understand the time spent in service and research. Service units were developed with one undergraduate course of normal size and not requiring unusual preparation equaling five service units. A similar upper level or graduate level course equaled six service units. Forty service units per year constituted a normal load. This researcher believes this system had some serious deficiencies as it assumed equity for all experience levels and academic disciplines. The system also left a great deal of discretion to department chairpersons in determining normal sizes and unusual preparations and assumed that a department chairperson had a keen understanding of all areas within his/her discipline.

Van Koevering and Sell (1979) reported on yet another system for measuring faculty workload called time banking

which was used in the Department of Science at the University of Wisconsin--Green Bay. With this system, faculty who made time commitments beyond their normal teaching load could deposit that time for release time in the future. A problem arose in attempting to determine the worth of various activities.

Over the years, the American Association of University Professors (AAUP) has been active in the determination of what constituted a normal workload for faculty. In a 1970 Statement on Faculty Workload, the AAUP criticized the practice of describing faculty workloads,

. . . in hours per week for formal class meetings . . . traditional workload formulations are at odds with significant current developments in education emphasizing independent study, the use of new materials and media, extracurricular and off-campus educational experiences, and interdisciplinary approaches to problems in contemporary society. (AAUP Bulletin, 1970, p. 30)

Yet the AAUP set the following criteria for institutions of higher education: "For undergraduate instruction, a teaching load of twelve hours per week, with no more than six separate course preparations during the academic year. . . . For instruction partly or entirely at the graduate level, a teaching load of nine hours per week" (AAUP Bulletin, 1970, p. 31). The AAUP recommended that institutions seeking excellence in faculty performance should lower the

hours of classroom instruction to nine hours per week for undergraduate instruction and six hours per week for graduate instruction.

The same statement noted that adjustments to faculty workload should be made according to the difficulty of courses (numerous preparations, new course or substantial revision, scope of course, and class size), research expectations, and responsibilities in addition to teaching and research.

Gaff and Wilson (1971) discussed workload of faculty in terms of additional activities that were related to classroom teaching. In addition to actual classroom teaching and preparation for teaching, they noted that college professors were required to participate in the following activities: housekeeping (class roll, attendance), course-planning, out-of-class teaching, advising and counseling, student extracurricular activities, keeping up-to-date in their field and informed on campus and departmental issues, graduate education, and research. Gaff and Wilson believed that individual differences in talent, energy, and teaching styles should be considered in determining workload and hypothesized that individual contracts would be the most equitable manner in which to consider all the demands made on individual faculty members.

In the only real deviation from measuring workloads in clock hours or credit hours, the National Science Foundation

(NSF) under the direction of R. J. Henle (1967) suggested that effort expended in carrying out one's professorial duties be used to measure and assign workloads. Effort was defined as "a combination of the degree to which a given activity calls into play the full capacities of the individual--his native ability, experience, learned and acquired skills"; "the degree to which the activity calls forth an expenditure of energy--of physical, emotional and mental power"; and time (Henle, 1967, p. 94). Ten categories of activities in which faculty participated were defined in Henle's study: teaching, research, teaching-research, creative activity in art and scholarship, teaching through creative activity in art and scholarship, public service, administration, formal personal education, intra-university activities, and other extra-university activities.

While a pilot group was favorable to the measurement of workload in percentage of effort, no suggestions were given as to how effort might be measured nor were any instruments developed for testing effort. The author admitted effort was a very subjective measure and non-quantitative.

In a study conducted by McLaughlin, Montgomery, Gravely and Mahan (1981), the researchers asked department heads at twenty-five comprehensive universities to respond to an open-ended question regarding the factors that they

believed to be most important in determining equity in faculty workload. The department chairpersons were also asked to rate effort needed to perform various instructional activities. The National Science Foundation (NSF) definition of effort was used and the standard of comparison (given 100 points) was a three credit hour lower-division lecture class with 25 students. The total sample size of department chairpersons was 1,314, but only 491 usable responses (38%) were returned. In analyzing the results of the chairpersons' responses, it was found that there was a linear relationship between effort and enrollment for various levels of instruction by two teaching modes (lecture and laboratory).

The researchers then attempted to validate their findings regarding effort by comparing effort with the results of a different survey in which faculty at one university were asked to report the time spent in various instruction-related activities over a one week period. No information was given on sample size or response rate for the faculty survey. Using regression analysis, a positive linear relationship was found between effort and time until effort scores reached approximate values of 220. The authors hypothesized that when effort reached a value of 200 that was equivalent to teaching a lecture of 300 to 400 students. Generally faculty teaching large lecture sections were given

graduate assistants and used computer-scored tests which would account for the discontinuity between time and effort. The authors concluded that class size, level of instruction, and mode of instruction were important components of the effort required to teach a specific class. Also, "spending a larger proportion of time on an activity is directly and linearly related to the relative effort of that activity" (McLaughlin et al., 1981, p. 15). The authors noted the relevance of interest in teaching in analyzing effort and time spent per week in analyzing faculty workloads but did not attempt to measure interest in this study.

Several researchers have attempted to measure faculty workloads in ways which do not include hours per week spent in various activities. The concept of effort was promoted by a study conducted by the National Science Foundation, yet effort, because of its subjective and qualitative nature, has been difficult to measure. Percentages of time spent or the assignment of points for various activities have also been used. When percentages were used to study workloads, a common base was present, yet comparisons from one person to another or one group to another were not possible. The assignment of points for various activities was, again, a subjective decision and disregarded the different priorities faculty members in different disciplines placed on various academic activities. The number of hours spent in various

activities in an average work week as reported by faculty themselves was apparently the most valid and reliable measure of faculty workloads to date.

Attitudes of Graduate Assistants toward
Assigned Duties and Workloads

How graduate students are treated may well affect how they, in years to come, treat future generations of graduate students, and the extent to which members of the faculty find an environment that is collegial and supportive rather than competitive and cutthroat, may have long term effects on how they go about addressing research inquiries or other scholarly undertakings. (Clark, Hartnett, and Baird, 1976, p. 175)

While the inter-relationship of attitudes toward work and job satisfaction are intuitively recognized, only a few researchers have investigated that relationship.

Levine and Weitz (1968) studied the job satisfaction of psychology graduate students in two universities using the Herzberg two factor theory of intrinsic and extrinsic variables. One major source of dissatisfaction among graduate students at both universities was their lack of influence in determining departmental policies. Other factors studied included satisfaction with the assistantship, environment, and constraints. The general quality, supervisory and technical competence, and breadth of outlook of the faculty were the most important sources of satisfaction/

dissatisfaction in graduate students found by the researchers. The researchers concluded that the Herzberg model was too simplified to explain the results of the study.

The national assessment of quality in doctoral education conducted by Clark, Hartnett, and Baird (1976) included a questionnaire for doctoral students. In one section of the questionnaire, the questions were aimed at general feelings of the environment in a particular school. Three examples of the types of questions in this section were:

The academic demands upon students in this department are very heavy. This graduate program is one of the best in the field. This department is a stimulating and exciting place to study.
(p. A52)

Students were to respond by circling (1) disagree strongly, (2) disagree with reservations, (3) agree with reservations, or (4) agree strongly.

Another section of the same questionnaire asked for opinions regarding assistantships. Responses were (1) poor, (2) fair, (3) good, or (4) excellent. Questions included opinions about the number of assistantships available, adequacy of stipends, nature of work (menial or professionally oriented), supervision, and office space.

Results of the analysis of the section regarding assistantship experiences yielded differences among the three

disciplines studied. In chemistry and psychology, student views of their assistantship experiences were related to the academic excellence of the program, its emphasis on research, and size. However, history graduate students rated their assistantship experiences high in those departments where environment received high ratings and research was not emphasized. Of the students responding, those holding graduate assistantships in history believed they had the greatest opportunity to act in a professional role.

From the same study, Hartnett (1981) evaluated the responses of the graduate students to the questions concerning student experiences. He was particularly interested in gender differences in perception of graduate education experiences but found greater differences by discipline than by sex.

Only one researcher was concerned with attitudes toward teaching and the impact of those attitudes on quality of teaching. Yaghlian (1972) involved fifteen teaching Fellows in the Chemistry Department at the University of Michigan in an in-service project focusing on the interpersonal aspect of teaching. There were 498 students enrolled in the chemistry classes taught by the Fellows. Attitude toward teaching as a career, job satisfaction, interpersonal style, and satisfaction of students with teachers were the

variables considered in assessing the value of the program. Students of the participating Fellows were more satisfied than students of non-participants. Furthermore, there was a positive change in attitude toward teaching and in job satisfaction among the graduate teaching Fellows who participated in the study. In another study, Sharp (1980) found that perceived interest in participating in training programs for graduate teaching assistants significantly influenced ratings assessed by trained observers.

A published instrument designed to measure attitudes of teachers is the Minnesota Teacher Attitude Inventory. That instrument was found suitable for teachers of young children through high school youths but not for teachers of college-age students (Cook, Leeds and Callis, 1951). There did not appear to be a suitable published instrument for measuring attitudes of college teachers toward teaching. Nor did there seem to be any published instruments for measuring attitudes of graduate assistants toward their assigned duties and workloads.

Several researchers, including Clark, Hartnett and Baird, 1976; Haggarty, 1937; Sticklers, 1960; and Shay, 1974, have noted differences across disciplines in the results of their studies. In studying the idea of differing research findings resulting because of differences in people who are found in various academic disciplines, Kuhn's theory of paradigms was explored.

Characteristics of Academic Departments

In his book, The Structure of Scientific Revolutions, Kuhn (1970) theorized that bodies of scientific knowledge were based on shared paradigms. Paradigms, as defined by Kuhn, were "the entire constellation of beliefs, values, techniques, and so on shared by the members of a given community" (p. 175). "A paradigm is what the members of a scientific community share, and, conversely, a scientific community consists of men who share a paradigm" (p. 176). Kuhn (1970) discussed "normal science" as ". . . research firmly based upon one or more scientific achievements, achievements that some particular scientific community acknowledges for a time as supplying the foundation for its further practice" (p. 10). Just because paradigms were well established for a discipline, that did not mean that new discoveries could not be made. When discoveries led to the disproval of established paradigms, scientific revolutions occurred and new paradigms were established.

It was Kuhn's theory that certain disciplines (such as physical sciences) were more mature than others (such as social sciences) in their development of paradigms. Those people working within disciplines with well established paradigms found it easier to communicate with each other because there was a common basis of understanding.

The study of paradigms . . . is what mainly prepares the student for membership in the particular scientific community with which he will later practice. Because he there joins men who learned the bases of their field from the same concrete models, his subsequent practice will seldom evoke overt disagreement over fundamentals. Men whose research is based on shared paradigms are committed to the same rules and standards for scientific practice. That commitment and the apparent consensus it produces are prerequisites for normal science, i.e., for the genesis and the continuation of a particular research tradition. (Kuhn, 1970, pp. 10-11)

Since Kuhn's work was published, a number of researchers have attempted to prove or disprove his theory of paradigms by investigating the differences among the preferred activities within university academic departments.

Lodahl and Gordon (1972) used a stratified random sample of 80 university departments; 20 each in the departments of physics, chemistry, sociology and political science. Within those 80 departments only faculty holding the rank of assistant professor or above, in residence, and with voting rights within the department were included in the sample. The survey yielded 1,161 usable responses, a 51% response rate. Physics and chemistry were chosen to represent fields with a high level of paradigm development while sociology and political science were low in paradigm development. The following hypotheses were tested and found to be significant by Lodahl and Gordon:

1. High-paradigm fields will report more agreement over content of survey courses than low-paradigm fields. (Lodahl and Gordon, 1972, p. 60) [Physics showed a high level of agreement and political science showed a low level of agreement, both significant at the .025 level. The results were not so clear for chemistry and sociology.]
2. On the level of graduate education, high-paradigm fields will report more agreement on course content and requirements for degrees than low-paradigm fields. (Lodahl and Gordon, 1972, p. 61) [Significant results showed that there was greater agreement within the physical sciences than the social sciences.]
3. High-paradigm scientists will exhibit less conflict over time spent with graduate students than scientists in low-paradigm fields. (Lodahl and Gordon, 1972, p. 62) [This hypothesis was strongly supported.]
4. High-paradigm scientists will use more teaching assistants than low paradigm scientists. (Lodahl and Gordon, 1972, p. 63) [While physical scientists did use more teaching assistants than the social sciences, the results were not significant. Because of the differing funding levels available at the time of the study, respondents were asked if they desired more teaching assistants than they currently had. While political science (which had the least number of teaching assistants) expressed a desire for more teaching assistants, physics and chemistry did also. Only sociologists showed little desire for more teaching assistants.]
5. High-paradigm scientists will have more research assistants than low-paradigm scientists. (Lodahl and Gordon, 1972, p. 64) [The physical sciences did have

a significantly greater number of research assistants than did the social scientists. The results of the desire for more research assistants were similar to the desire for more teaching assistants.]

6. High-paradigm scientists will exhibit more willingness to advise and help graduate students than low-paradigm scientists. (Lodahl and Gordon, 1972, p. 64) [The results were as anticipated for all fields except physics.]
7. Elite high-paradigm scientists will be more willing to work with graduate students than elite low-paradigm scientists. (Lodahl and Gordon, 1972, p. 65) [Again, the results were as anticipated with the exception of physics.]

While the results of this study generally supported Kuhn's theory of paradigms, several possible reasons for physics not fitting "the mold" were advanced. Several of those reasons included the over-supply of physicists at the time of the study, difficulty in working with graduate students in physics, or a revolution, as Kuhn outlined, in the paradigms accepted by physicists. The researchers concluded, "the differing structures of scientific fields have correlates in attitudes, activity levels, etc., of scientists and have implications for the way scientists organize themselves (or are organized) to accomplish their work" (Lodahl and Gordon, 1972, p. 70).

Anthony Biglan (1971, 1973a) also investigated Kuhn's theory by seeking to find dimensions upon which faculty

could agree. The sample included 168 faculty members at the University of Illinois at Urbana-Champaign who made judgments about 36 academic areas and 54 faculty members at a small western college who made judgments about 30 of the same areas. The faculty members were asked to judge the similarities of the subject matter in different academic areas. Using a sorting system, respondents were asked to decide on the placement of a subject matter as to (1) Pure/Applied, (2) Hard/Soft, (3) Biological/Nonbiological, (4) Interesting/Of no interest, (5) Traditional/Nontraditional, and (6) Life Sciences/Nonlife Sciences. Pure/Applied ($r = .82$), Hard/Soft ($r = .73$), and Life Sciences/Nonlife Sciences ($r = .68$) were the three dimensions found to be used most often by faculty members on both campuses in distinguishing among disciplines. This writer believes that the Life Science/Nonlife Science dimension may have been a stronger dimension if Biological/Nonbiological ($r = .66$) had been deleted because the two are so similar in scope.

In this same research study Biglan (1971, 1973b) investigated the responses of faculty in 47 departments at the University of Illinois at Urbana-Champaign regarding the structure of their social relationships and their commitments to research, teaching, administration and service. A three-way analysis of variance design was used to examine the relationships between area characteristics (Hard/Soft,

Pure/Applied, Life System/Nonlife System) and department structure and output.

Results showed that faculty in the Hard sciences reported more collaboration with other faculty members in teaching activities, more work with other faculty in research activities, a greater number of co-authorships, and more sources of influence on research goals than faculty members in the Soft sciences. Faculty in the Soft sciences preferred teaching and spent more of their time on teaching activities while faculty members in the Hard sciences preferred research and spent more time on research activities. As might be expected from these results, Hard scientists produced more journal articles than Soft scientists, partly because of the co-authorship of journal articles.

In comparing Pure and Applied academic areas, Biglan found that faculty in Applied areas preferred working with more people on both research and teaching activities than did faculty in Pure areas. Faculty in Pure areas preferred research activities, but did not spend more time on research than on other activities. Faculty members in Applied areas preferred service activities and did spend more time on service activities.

Biglan also compared faculty in Life System and Non-life System areas. He found that Life System faculty preferred working with significantly more people on teaching

activities than did the Nonlife System faculty members. However, a surprising result was the greater preference for teaching by Nonlife System faculty than the Life System faculty; the Nonlife System faculty reported spending more time on teaching activities than the Life System faculty.

Biglan outlined the importance of these results in studying the output of university departments:

These results point to the need to consider subject matter characteristics in studying academic organizations. They define limits on the extent to which studies in one area can be generalized to areas whose subject matter is different and indicate why studies of academic organizations should not lump together data that come from different areas. Finally, the study points to the need for evaluative standards that are appropriate to the particular activities and outputs of the academic area. (Biglan, 1973b, p. 213)

Table 2, page 6 illustrates Biglan's classification system of departments using the three dimensions of Hard/Soft, Pure/Applied, and Life System/Nonlife System.

Biglan's theoretical model was further tested by Smart and Elton (1975, 1976). Department chairpersons were studied to see if they placed different emphases on typical goals as related to the dimensions outlined by Biglan. The sample consisted of 1,646 chairpersons from 32 state-supported universities which awarded the doctorate degree and had total student enrollments between 9,000 and 21,000.

Seventy-three percent (1,198) of the chairpersons responded. The eleven department goals tested were

1. Produce new knowledge through research;
2. Graduate a well-versed student with a balanced education;
3. Develop an efficient organization through the use of appropriate managerial decisions;
4. Provide a direct service to other organizations in the university, community and state;
5. Improve the quality of the department relative to peer departments at this and other universities;
6. Encourage the personal and professional development of departmental faculty;
7. Maintain the goals and requirements of the central administration;
8. Develop and/or maintain an outstanding departmental graduate program;
9. Educate the student for a future career;
10. Provide the faculty and staff with a congenial place to work; and
11. Maintain a spirit of inquiry and academic freedom.

Results of the study showed that while all goals received moderate to high emphases across all departments, discrimination among goals following Biglan's dimensions occurred. Pure academic departments tended to favor those goals which were supportive of faculty research interests while the Applied academic departments placed greater emphasis on vocationally-oriented goals. Smart and Elton found

that Hard departments tended to stress goals related to teaching and research while Soft departments thought that administrative processes and overall climate were more important. This somewhat contradicted Biglan's findings that Soft departmental faculty preferred teaching. Finally, the Nonlife System departments placed greater emphasis on those goals that were related to teaching while the Life System departments emphasized research and service-related goals.

Smart and Elton suggested that the Biglan model was rigorous enough to support more research involving people and their environments in higher education. "It seems reasonable that further research might reveal broad differences between students and/or faculty in these academic environments in terms of their personal backgrounds, educational and vocational aspirations, cognitive styles, and personality traits" (Smart and Elton, 1975, p. 587).

While Clark, Hartnett, and Baird (1976) did not use the Biglan model in their assessment of quality in doctoral education, they did note differences in responses among the three departments in which they centered their research. Some of those differences included differing patterns of publication, differing career directions anticipated by doctoral students, and greater student satisfaction with the

environment of a department in those departments which emphasized teaching. It was reported that ". . . student views about assistantships in chemistry and psychology are related to the academic excellence of the program, its size, and its emphasis on research; but, in history . . . views . . . are positively related to characteristics of the environment and negatively related to research emphasis or reputation" (Clark, Hartnett, and Baird, 1976, pp. 9.10-9.12). This could suggest that differences among faculty by discipline as studied by Biglan and Smart and Elton may also be present in the graduate students in the various departments.

Summary

From the research in the four areas considered in this review, some problems for additional research were indicated. While there were concerns for the workloads of graduate assistants, the subject had been discussed in only a peripheral manner by writers concerned with reform and/or quality in graduate education. Likewise, the attitudes of graduate assistants toward their assigned workloads had not been studied. Clark, Hartnett, and Baird (1976), in their national study attempting to assess quality in doctoral education, asked doctoral students to assess the environment of their graduate departments. In a section of the doctoral

student questionnaire concerned with graduate assistantships, there were questions of a general nature regarding stipend, office space, and availability of assistantships, but there were no questions regarding preferences for research or teaching or attempts to distinguish between research and teaching assistants.

Because there was a limited amount of literature regarding graduate assistant workloads, the subject of faculty workloads was explored. Since graduate assistants were involved in some of the same research and teaching activities as faculty members, it was believed that the research on faculty workloads would provide insight into the workloads of graduate assistants.

While several methods of measuring faculty workloads were reviewed, the majority of research relied upon the self-reports of total hours spent on various activities in an average week. Even when another form of measurement (effort) was used, as in the McLaughlin, Montgomery, Gravely and Mahan (1981) study, findings were validated using self-reports of total hours spent on various activities.

In several of the studies of faculty workload and in the Clark, Hartnett, and Baird (1976) study of quality in doctoral education, differences of results among various academic disciplines were noted. The research efforts of Biglan (1971), Smart and Elton (1975, 1976), and Lodahl and

Gordon (1972) investigated the theory of differing priorities in performing academic duties by faculty members in various academic disciplines. Kuhn's (1970) theory of paradigm development was the basis for their research efforts. Using rigorous statistical research methods, the researchers substantiated the existence of differing priorities within various academic departments. Smart and Elton suggested an area of needed research was in the "differences between students and/or faculty in these academic environments in terms of their personal backgrounds, educational and vocational aspirations, cognitive styles, and personality traits" (Smart and Elton, 1975, p. 587).

CHAPTER III METHOD OF PROCEDURE

The purpose of this study was to test Biglan's classification scheme of academic task preferences of faculty as it applied to graduate students employed as graduate assistants. The study addressed the following research questions:

1. Will graduate assistants in academic departments classified as Hard/Soft, Pure/Applied, or Life System/Nonlife System have significantly different preferences for either teaching or research?
2. Will graduate assistants in academic departments classified as Hard/Soft, Pure/Applied, or Life System/Nonlife System indicate significantly different levels of job satisfaction?
3. Will graduate assistants in academic departments classified as Hard/Soft, Pure/Applied, or Life System/Nonlife System indicate significantly different levels of supervision from departmental faculty?
4. Can various measures of task preferences, job satisfaction, supervision from faculty, and hours worked per week be used to accurately predict group membership in either Hard/Soft, Pure/Applied, or Life System/Nonlife System academic departments?

Chapter III outlines the design of the study and data collection. Within this chapter, the research hypotheses are stated followed by a description of the development of the survey instrument and the population. A pilot study was conducted leading to minor revisions in the survey instrument. Finally the collection of data is described followed by a discussion of the types of data analyses used in this study.

General Research Design

A survey form of research was used in this study. The survey approach was advantageous in that a sufficient amount of information could be obtained from a large population in a fairly short period of time. This study and the data collected were an outgrowth of the Smith and Goodale study of 1982.

Statement of the Research Hypotheses

Based on the purpose of this study and the research questions, the hypothesis being tested is

H₀: There is no difference in preference for teaching or research, job satisfaction, supervision from departmental faculty, or hours spent working per week when graduate assistants are classified as being in either Hard or Soft, Pure or Applied, or Life System or Nonlife System sciences.

Within the main hypothesis are 9 subhypotheses. Each of the subhypotheses is concerned with one of the dependent variables, hours worked per week, and group membership by department classification. The subhypotheses are

- H₀₁: There is no difference in the preference for teaching or research between graduate assistants in Hard and Soft sciences for each of three classification levels and among six categories of hours worked per week.
- H₀₂: There is no difference in the preference for teaching or research between graduate assistants in Pure and Applied sciences for each of three classification levels and among six categories of hours worked per week.
- H₀₃: There is no difference in the preference for teaching or research between graduate assistants in Life System and Nonlife System sciences for each of three classification levels and among six categories of hours worked per week.
- H₀₄: There is no difference in job satisfaction between graduate assistants in Hard and Soft sciences for each of three classification levels and among six categories of hours worked per week.
- H₀₅: There is no difference in job satisfaction between graduate assistants in Pure and Applied sciences for each of three classification levels and among six categories of hours worked per week.
- H₀₆: There is no difference in job satisfaction between graduate assistants in Life System and Nonlife System sciences for each of three classification levels and among six categories of hours worked per week.

- H₀₇: There is no difference in supervision from faculty between graduate assistants in Hard and Soft sciences for each of three classification levels and among six categories of hours worked per week.
- H₀₈: There is no difference in supervision from faculty between graduate assistants in Pure and Applied sciences for each of three classification levels and among six categories of hours worked per week.
- H₀₉: There is no difference in supervision from faculty between graduate assistants in Life System and Nonlife System sciences for each of three classification levels and among six categories of hours worked per week.

Population

The population for the Smith and Goodale study (1982) consisted of all the graduate assistants at the University of Florida during the Fall semester, 1981. A listing of graduate assistants at the University of Florida was obtained from the Office of the Dean of Graduate Studies and Research at the beginning of the Fall semester. The listing was in two forms. The first listing was in alphabetical order by graduate assistant's last name. The second listing categorized graduate assistants by department and served as a cross-check for accuracy. The alphabetical list contained the names of 1,517 graduate assistants. Of the original list of graduate assistants, 74 were no longer graduate assistants by the time the survey instrument was distributed. A pilot sample of 100 was used. After these two deletions,

the remaining population was 1,343 in number. The population for this research was that portion of the respondents to the Smith and Goodale study (1982) who were also in departments similar to those used by Biglan (1971) (see Table 1, page 5).

The classifications of graduate assistants in this study were the same as those set by the Graduate School. In two memoranda, dated July 9, 1981 (see Appendix A) and circulated to all deans of colleges, department chairpersons, and graduate faculty, the Graduate School defined five classifications for graduate student appointments at the University of Florida:

Graduate Assistant: Beginning graduate students should be appointed as Graduate Assistants.

Graduate Research Assistant/Graduate Teaching Assistant: These appointments are to be reserved for advanced graduate students who have completed a minimum of 30 semester hours of graduate work toward a graduate degree. The appointment should involve an increase in stipend and responsibility over that of a graduate assistant.

Graduate Research Associate/Graduate Teaching Associate: These appointments should be granted only to students who have completed most of the work required for the doctorate. It should carry a stipend and responsibility above that of the Graduate Research Assistant and Graduate Teaching Assistant. (Appendix A, p. 155)

Percentage of full-time employment was fixed for graduate assistants only. Those appointments were suggested to carry the following workload requirements stated in hours per week:

One-fourth time--assigned duties not to exceed 4 classroom contact hours or 6 laboratory contact hours per week with total assigned duties not to exceed 10 hours per week. The time spent in preparation for teaching and grading were included as duties.

One-third time--assigned duties not to exceed 6 classroom contact hours or 9 laboratory contact hours with total assigned duties not to exceed 13 1/3 hours per week.

One-half time--assigned duties not to exceed 9 classroom contact hours or 12 laboratory contact hours with total assigned duties not to exceed 20 hours per week. (Appendix A, p. 156)

Officially, the percentage of full-time employment for which Graduate Teaching/Research Assistants/Associates could be appointed was dependent upon the nature of the work assignment. However, general campus practice was to follow the same hours per week as was specified for Graduate Assistants.

The University of Florida is a large, land-grant institution with an enrollment of approximately 34,000 students. All states in the United States and nearly all countries of the world are represented in the diverse student body. There are sixteen colleges within the University.

Those colleges are Architecture, Business, Dentistry, Education, Engineering, Fine Arts, Health Related Professions, Institute of Food and Agricultural Sciences, Journalism and Communication, Law, Liberal Arts and Sciences, Medicine, Nursing, Pharmacy, Physical Education, Health and Recreation, and Veterinary Medicine.

At the time of the Smith and Goodale study (1982), there was a great deal of interest in graduate assistants on the University of Florida campus. The original study was funded by the Dean of Graduate Studies and Research. He was particularly interested in (1) the unmet needs of those graduate assistants who were teaching and (2) the average hours per week worked by all graduate students in meeting the requirements of their assistantships.

Because of the large number of graduate assistants and the diversity of the institution, the University of Florida was an ideal situation in which to test Biglan's (1971) findings. Table 1, page 5, lists the departments Biglan studied at the University of Illinois at Urbana-Champaign. Table 3, page 52, lists the comparable departments available for study at the University of Florida. Table 4 categorizes the Florida departments as Biglan's study would suggest.

Table 3 lists thirty-two departments rather than thirty-six as in Biglan's study. The University of Florida has a degree offering in Vocational and Technical Education,

Table 3
Population of Graduate Assistants (GAs) by Academic
Department Investigated at the University of Florida

<u>Department</u>	<u>Number GAs in Department</u>	<u>Number GAs Responding</u>	<u>Number Useable</u>
Accounting	14	9	8
Agronomy	22	11	9
Agricultural Economics	3	1	0
Anthropology	30	16	12
Astronomy	14	11	8
Botany	17	13	11
Chemistry	104	68	52
Civil Engineering	28	17	15
Computer and Information Sciences	15	12	12
Dairy Science	8	7	6
Economics	20	7	6
Educational Administration and Supervision	5	4	4
English	49	34	28
Entomology and Nematology	53	26	16
Finance, Insurance and Real Estate	13	10	7
Fruit Crops, Vegetable Crops and Ornamental Horticulture	31	22	20
Geology	15	11	8
Germanic and Slavic Languages and Literatures	9	3	3
History	14	11	11
Mathematics	41	31	25
Materials Science and Engineering	42	19	13
Mechanical Engineering	36	23	20
Microbiology and Cell Structure	21	15	13
Nuclear Engineering	13	11	5
Philosophy	7	4	4
Physics	45	28	22
Physiology	6	3	0
Political Science	16	10	5
Psychology	56	32	26
Secondary Education - General Teacher Education and Subject Specialization			
Teacher Education	2	2	2
Sociology	20	14	10
Special Education	4	3	2
Speech	19	9	9
Zoology	59	50	40
Totals	851	547	432

Table 4
 Classification of University of Florida Academic Departments
 According to Biglan's Research Findings

Task Area	Hard		Soft	
	Nonlife System	Life System	Nonlife System	Life System
Pure	Astronomy	Botany	English	Anthropology
	Chemistry	Entomology and Nematology	German and Slavic Languages and Literatures	Political Science
	Geology	Microbiology	History	Psychology
	Math	Physiology	Philosophy	Sociology
	Physics	Zoology	Speech	
Applied	Civil Engineering	Agricultural	Accounting	Educational
	Computer and Information Sciences	Economics	Economics	Administration
	Materials Science	Agromony	Finance, Insurance and Real Estate	and Supervision
	and Engineering	Dairy Science		Secondary Education
	Mechanical Engineering	Fruit Crops, Vegetable Crops and Ornamental Horticulture		Special Education
	Nuclear Engineering			

but there were no graduate assistants for that program at the time of this study. There is not a Ceramic Engineering Department at the University of Florida; the Materials Science and Engineering Department was substituted in its place. The Departments of Fruit Crops, Vegetable Crops, and Ornamental Horticulture were combined and used as one Horticultural Science for this study. The Department of Speech was used in this study as it more nearly approximated the Department of Communications included in the Biglan study (1971). Another change from Biglan's departmental listing was the combination of German and Russian into the Department of Germanic and Slavic Languages and Literatures at the University of Florida. Finally, at the University of Florida, Entomology is referred to as Entomology and Nematology, and Secondary and Continuing Education is referred to as General Teacher Education and Subject Specialization Teacher Education. With survey research, some respondents may be lost to the study due to missing data. In this study, there were no usable responses left in either the Agricultural Economics or Physiology Departments.

Table 5, Page 55, shows the number of graduate students at each of the five classification levels. Because there were so few graduate students classified as Graduate Teaching Associate or Graduate Research Associate, those classifications were dropped from the study.

Table 5
Population of Graduate Assistants Who Responded
Grouped by Classification

	Classification					Total
	Graduate Assistant (GA)	Graduate Teaching Assistant (GTA)	Graduate Research Assistant (GRA)	Graduate Teaching Associate (GT Assoc.)	Graduate Research Associate (GR Assoc.)	
Science						
Hard Sciences Soft Sciences	225 80	42 41	25 15	0 1	3 0	295 137
	202 103	71 12	30 10	0 1	0 3	303 129
Life System Sciences Nonlife System Sciences	109 196	43 40	23 17	1 0	0 3	176 256
Total	305	83	40	1	3	432

Instrumentation

The questionnaire developed for the Smith and Goodale study and used in this research project is shown in Appendix B. In developing the questionnaire questions were developed for each of the research questions listed in the Smith and Goodale study (1982). Six graduate assistants from various academic departments were selected to respond to the initial questionnaire. In addition to responding to the questionnaire, the six graduate assistants were interviewed by the researcher to determine any points of confusion. The initial questionnaire was revised for use in the pilot study.

The questionnaire was divided into five parts. Part A of the questionnaire was to gather general information about the respondent. Parts C and D asked for the graduate assistants' needs in further developing their teaching skills and preferred instructional format for learning needed skills. Those parts were not pertinent to this study and have been deleted from consideration.

Attitudes toward workloads were the focus of Part B. Questions were designed to discover preferences for teaching or research among graduate assistants. Also of interest in this part were attitudes toward supervision from departmental faculty, salary, office space, and workload.

Respondents were asked to mark their responses to questions on the answer sheet according to the following categories:

- a. Strongly agree
- b. Agree
- c. Disagree
- d. Strongly disagree
- e. Undecided

In part E, the only question of interest to this study was the self-report of hours worked per week in fulfilling assistantship duties. The hours worked in various activities was an open-ended question to encourage more precise answers.

Pilot Study

The pilot sample for the Smith and Goodale study and this research project was selected by choosing every fifteenth name starting with the first name on the alphabetical list of graduate assistants for a sample size of 100. This method was successful in choosing a representative sample. The questionnaires were distributed through campus mails. The response to the pilot survey was high with 74% of the graduate assistants returning their questionnaires after two reminder letters.

Some minor revisions in wording and format were made in the survey instrument following the pilot study. See Appendix C for a copy of the pilot questionnaire. The directions for scoring the answer sheet were modified slightly for greater clarity. In the pilot study, students who had

earned bachelor's or master's degrees differing from the specific ones listed tended to add theirs to the other category. To simplify machine scoring, additional degrees such as the B.F.A. and M.B.A. were added to Items 3 and 4 on the survey instrument. On Item 10, scoring was simplified by forcing responses into a category of type of class by eliminating the other category. In Part E the order of the items was changed on the survey instrument. Finally, the blank lines for responses in hours on Item 56 were placed in a column so that respondents would not miss any lines and to ease in the tabulation of the total weekly workload.

Data Collection

While a random sample of graduate assistants could have been selected to receive the survey instrument, it was decided to send a questionnaire to the total population remaining after the pilot study so that everyone involved would have an opportunity to respond. Following revision of the instrument after the pilot study and approval from the Human Subjects Committee of the University of Florida, the collection of data was begun.

Packets containing a letter of explanation, the questionnaire, coded answer sheets, and addressed return

envelope were mailed through campus mails to all graduate assistants on October 26, 1981. As responses were received, each response was noted on the lists of graduate assistants obtained from the Graduate School. A reminder letter was sent to all graduate assistants who had not responded on November 13, 1981. See Appendix B for packet contents and reminder letter.

All responses were hand checked for clarity. The responses, as recorded on the coded answer sheets by the participants, were scanned onto magnetic computer tape at the Office of Instructional Resources. Using a remote terminal, the researcher entered each of the responses to the hours worked in various assigned activities into a system file for merger onto the magnetic tape.

Analysis of Data

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) and the Burroughs 6800 Computer. In analyzing the data, the researcher assumed that the data were obtained independent of all others, the variances among the data were equal, and the responses were normally distributed.

Analysis of Variance (ANOVA)

An analysis of variance was performed on each of the 9 subhypotheses to determine the significance of group membership and hours worked per week on the three dependent variables. Biglan (1971) had found differences in faculty preferences for teaching and research and amount of co-worker associations. Time had been a factor in some instances. Supervision from departmental faculty was used in this study in place of co-worker association. Preferences for teaching and research were used as they had been in the Biglan study. Job satisfaction was also included in this study. The level of statistical significance was set at the .05 level of confidence. Each of the nine subhypotheses was tested for each of the three classification levels creating 27 separate ANOVA summary tables. Each of the hypotheses was tested first for an interaction between the two independent variables. If no significant interaction was found the hypothesis was tested again without the interaction term. The results of these analyses of variances are presented in Tables 6 through 32 in Chapter IV of this study.

Discriminant Analysis

The last research question was concerned with how well the variables chosen for this study, as represented in the survey instrument, could discriminate among groups of graduate students and classify them as belonging in Hard or

Soft, Pure or Applied, or Life System or Nonlife System sciences. For the discriminant analysis, the graduate students were not separated by classification level (Graduate Assistant, Graduate Teaching/Research Assistant, Graduate Teaching/Research Associate). It was decided to use 67% as the arbitrary level of prediction of group membership. If group membership could be predicted correctly 2 out of 3 times (67%), the variables used in this study would be considered strong predictor variables. The results of the discriminant analyses are shown in Tables 34 through 36 of Chapter IV.

CHAPTER IV ANALYSIS AND RESULTS

Introduction

The purpose of the study was to test Biglan's classification scheme of academic task preferences as it applied to graduate students employed as graduate assistants. The primary null hypothesis was

H₀: There is no difference in preference for teaching or research, job satisfaction, supervision from departmental faculty, or hours spent working per week when graduate students are classified as being in either Hard or Soft, Pure or Applied, or Life System or Nonlife System sciences.

Description of the Sample

The sample for this study consisted of the graduate students who responded to the questionnaire and who were also graduate assistants in one of the departments listed in Table 3, page 52. There were 851 graduate assistants in those 34 departments in the Fall semester, 1981. Of these 851, 547 returned questionnaires for a response rate of 64%. Of those responding, 432 (51%) were usable. While the response rate was not as high as the researcher had hoped, the return rate and total useable rate were higher than many

other survey research efforts. Of the 432 usable responses, 305 were classified as Graduate Assistants (GAs), 83 were classified as Graduate Teaching Assistants (GTAs), and 40 were classified as Graduate Research Assistants (GRAs). See Tables 3, 4, and 5 in Chapter III for more complete information on the population.

Data Analysis

The remainder of this chapter is divided into two sections: (1) results of the Analysis of Variance (ANOVA) of each of the subhypotheses, and (2) results of the discriminant analysis of the primary hypothesis.

Analysis of Variance

Twenty-seven analyses of variances were completed using the ANOVA subprogram of the Statistical Package for the Social Sciences (SPSS). Each of the 9 subhypotheses was analyzed three times, once for each classification level of graduate assistant.

Preference for Teaching or Research

The first three subhypotheses were

H₀₁: There is no difference in the preference for teaching or research between graduate assistants in Hard and Soft sciences for each of three classification levels and among six categories of hours worked per week.

- H₀₂: There is no difference in the preference for teaching or research between graduate assistants in Pure and Applied sciences for each of three classification levels and among six categories of hours worked per week.
- H₀₃: There is no difference in the preference for teaching or research between graduate assistants in Life System and Nonlife System sciences for each of three classification levels and among six categories of hours worked per week.

For the purpose of this study, preference for teaching and research was measured by one item, Item 12, in the questionnaire (See Appendix B). Item 12 was

If given a choice, I prefer research to teaching.

Respondents could answer by marking the answer sheet as (a) Strongly agree, (b) Agree, (c) Disagree, (d) Strongly disagree, or (e) Undecided. Graduate student responses were recoded to give the following values:

- 5 = Strongly agree
- 4 = Agree
- 3 = Undecided
- 2 = Disagree
- 1 = Strongly disagree

The results of the analyses of variances for the first three hypotheses are shown in Tables 6 through 14.

Hard/Soft Sciences

To determine the significance of the dependent variable Preference for Teaching or Research (PREF) for Hard and Soft sciences, an Analysis of Variance (ANOVA) was performed. Hours worked per week (HRS) and Hard and Soft sciences (Science 1) were the independent variables. The

ANOVA was performed first with the interaction term, Science 1 X HRS, included in the equation. As Tables 6 through 8 show, the interaction term was not significant at the .05 level for all three levels of graduate assistant classifications. Because the interaction terms were not significant, the ANOVA was performed once again with the interaction term deleted from the equation. The results of these ANOVAs are also shown in Tables 6 through 8.

For both Graduate Assistants (GA), Table 6, and Graduate Research Assistants (GRA), Table 8, Science 1 (Hard and Soft sciences) was highly significant in predicting a preference for teaching or research. For Graduate Assistants (GA), those GAs in Hard sciences had a mean value of 3.75 on Item 12 while those GAs in Soft sciences had a mean value of 2.86. GAs in Hard sciences indicated a significantly greater preference for research than did GAs in Soft sciences. For Graduate Research Assistants (GRA), those GRAs in Hard sciences had a mean value of 4.28 on Item 12 while those GRAs in Soft sciences had a mean value of 3.07. GRAs in Hard sciences indicated a significantly greater preference for research than did GRAs in Soft sciences.

Table 6
 Relationship among Graduate Assistants' (GAs)
 Preferences for Teaching or Research (PREF),
 Hard and Soft Sciences (Science 1), and
 Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	45.970	1	45.970	29.271	0.000
HRS	2.477	5	0.495	0.315	0.904
Science 1 X HRS	5.420	5	1.084	0.690	0.631
Error	460.151	293	1.570		
Total	514.184	304	1.691		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	45.970	1	45.970	29.424	0.000
HRS	2.477	5	0.495	0.317	0.903
Error	465.571	298	1.562		
Total	514.184	304	1.691		

Means

Hard Sciences

PREF = 3.75
 N = 225

Soft Sciences

PREF = 2.86
 N = 80

Hours

1(0-10)

PREF = 3.57
 N = 23

2(11-13)

PREF = 3.55
 N = 67

3(14-20)

PREF = 3.48
 N = 103

4(21-30)

PREF = 3.35
 N = 48

5(31-40)

PREF = 3.61
 N = 33

6(41-120)

PREF = 3.68
 N = 31

Table 7
 Relationship among Graduate Teaching Assistants' (GTAs)
 Preferences for Teaching or Research (PREF),
 Hard and Soft Sciences (Science 1), and
 Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	51.929	1	51.929	45.633	0.000
HRS	13.924	5	2.785	2.447	0.042
Science 1 X HRS	8.554	5	1.711	1.503	0.200
Error	80.795	71	1.138		
Total	158.795	82	1.937		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	51.929	1	51.929	44.170	0.000
HRS	13.924	5	2.785	2.369	0.047
Error	89.350	76	1.176		
Total	158.795	82	1.937		

Means

Hard Sciences

PREF = 3.93
N = 42

Soft Sciences

PREF = 2.29
N = 41

Hours

1(0-10)
PREF = 3.00
N = 5

2(11-13)
PREF = 2.25
N = 8

3(14-20)
PREF = 3.54
N = 37

4(21-30)
PREF = 2.67
N = 18

5(31-40)
PREF = 2.88
N = 8

6(41-120)
PREF = 3.43
N = 7

Table 7--continued

<u>Confidence Intervals</u>	
Group 1 VS Group 2 (2.04, -.54)	*Group 3 VS Group 4 (1.54, .21)
Group 1 VS Group 3 (.54, -1.62)	Group 3 VS Group 5 (1.53, -.21)
Group 1 VS Group 4 (1.5, -.84)	Group 3 VS Group 6 (1.04, -.82)
Group 1 VS Group 5 (1.41, -1.17)	Group 4 VS Group 5 (.78, -1.20)
Group 1 VS Group 6 (.92, -1.78)	Group 4 VS Group 6 (.26, -1.78)
*Group 2 VS Group 3 (-.42, -2.16)	Group 5 VS Group 6 (.62, -1.72)
Group 2 VS Group 4 (.57, -1.41)	
Group 2 VS Group 5 (.51, -1.77)	
*Group 2 VS Group 6 (-.01, -2.35)	

*indicates significant differences between groups

Table 8
 Relationship among Graduate Research Assistants' (GRAs)
 Preferences for Teaching or Research (PREF),
 Hard and Soft Sciences (Science 1), and
 Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	14.649	1	14.649	7.851	0.009
HRS	4.949	5	0.990	0.530	0.751
Science 1 X HRS	8.776	5	1.755	0.941	0.470
Error	52.248	28	1.866		
Total	79.775	39	2.046		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	14.649	1	14.649	7.922	0.008
HRS	4.949	5	0.990	0.535	0.748
Error	61.024	33	1.849		
Total	79.775	39	2.046		

Means

Hard Sciences

PREF = 4.28
 N = 25

Soft Sciences

PREF = 3.07
 N = 15

Hours

1(0-10)

PREF = 4.00
 N = 2

2(11-13)

PREF = 5.00
 N = 2

3(14-20)

PREF = 3.59
 N = 17

4(21-30)

PREF = 4.00
 N = 6

5(31-40)

PREF = 4.00
 N = 6

6(41-120)

PREF = 3.78
 N = 9

For Graduate Teaching Assistants (GTA), Table 7, Science 1 (Hard and Soft sciences) was also highly significant in predicting a preference for teaching or research. Those GTAs in Hard sciences had a mean value of 3.93 on Item 12 while those GTAs in Soft sciences had a mean value of 2.29. GTAs in Hard sciences indicated a significantly greater preference for research than did GTAs in Soft sciences.

However, hours worked per week (HRS) was also significant in predicting a preference for research or teaching. The Scheffe technique was used to test the significance of all possible pairwise contrasts. The error rate per family was set at the .05 level of statistical significance. In examining all possible pairwise contrasts, significant differences were found only between groups 2 and 3, groups 2 and 6, and groups 3 and 4. Means and confidence intervals are reported in Table 7, page 67. When comparing hours worked per week, those GTAs working 14 to 20 hours per week indicated a significantly greater preference for research than GTAs who worked 11 to 13 hours per week. GTAs who reported working over 40 hours per week also indicated a significantly greater preference for research than those GTAs who worked 11 to 13 hours per week. GTAs working 14 to 20 hours per week indicated a significantly greater preference

for research than did GTAs working 21 to 30 hours per week. There were no significant differences between groups in the other twelve comparisons.

The researcher believed the significant group differences in preference for research or teaching by hours worked per week was not of major importance. First, only three of the fifteen comparisons were significant. Secondly, no trends seemed evident within the three comparisons. Thirdly, hours worked per week were not significant in predicting a preference for teaching or research in the GA or GRA classifications. Certainly the most important result is the statistically significant preference for research exhibited by all graduate assistantship classifications in the Hard sciences.

The results of the analyses of variances performed on all three levels of graduate assistants showed a significantly greater preference for research for those graduate students in Hard sciences than for those in Soft sciences. Therefore, the null hypothesis, H_{01} : There is no difference in the preference for teaching or research between graduate assistants in Hard and Soft sciences for each of three classification levels and among six categories of hours worked per week, was rejected for GTAs. For GAs and GRAs, the Hard and Soft sciences categorization was significant in relation to preferences for teaching and research but hours worked per week was not significant.

Pure/Applied Sciences

To determine the significance of the dependent variable preference for teaching or research (PREF) in Pure and Applied sciences, an analysis of variance (ANOVA) was performed. Hours worked per week (HRS) and Pure and Applied sciences (Science 2) were the two independent variables. The ANOVA was first performed with the interaction term, Science 2 X HRS, included in the equation. As Tables 9 through 11 show, the interaction term was not significant at the .05 level of statistical significance. A second ANOVA was performed with the interaction term deleted from the equation. The results of these analyses are also shown in Tables 9 through 11.

For all three levels of graduate assistants, the Pure/Applied classification and hours worked per week were not significant variables in predicting a preference for either teaching or research. The null hypothesis, H_{02} : There is no difference in the preference for teaching or research between graduate assistants in Pure and Applied sciences for each of three classification levels and among six categories of hours worked per week, failed to be rejected.

Table 9
Relationship among Graduate Assistants' (GAs) Preferences
for Teaching or Research (PREF), Pure and Applied Sciences
(Science 2), and Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	1.079	1	1.079	0.623	0.430
HRS	2.529	5	0.506	0.292	0.917
Science 2 X HRS	3.206	5	0.641	0.370	0.869
Error	507.255	293	1.731		
Total	514.184	304	1.691		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	1.079	1	1.079	0.630	0.428
HRS	2.529	5	0.506	0.295	0.915
Error	510.462	298	1.713		
Total	514.184	304	1.691		

Means

Pure Sciences

PREF = 3.56
N = 202

Applied Sciences

PREF = 3.43
N = 103

Hours

1(0-10)
PREF = 3.57
N = 23

2(11-13)
PREF = 3.55
N = 67

3(14-20)
PREF = 3.48
N = 103

4(21-30)
PREF = 3.35
N = 48

5(31-40)
PREF = 3.61
N = 33

6(41-120)
PREF = 3.68
N = 31

Table 10
 Relationship among Graduate Teaching Assistants' (GTAs)
 Preferences for Teaching or Research (PREF),
 Pure and Applied Sciences (Science 2), and
 Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	6.483	1	6.483	3.840	0.054
HRS	15.308	5	3.062	1.814	0.121
Science 2 X HRS	11.562	3	3.854	2.283	0.086
Error	123.234	73	1.688		
Total	158.795	82	1.937		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	6.483	1	6.483	3.655	0.060
HRS	15.308	5	3.062	1.726	0.139
Error	134.795	76	1.774		
Total	158.795	82	1.937		

Means

Pure Sciences

PREF = 3.25
N = 71

Applied Sciences

PREF = 2.33
N = 12

Hours

1(0-10)

PREF = 3.00
N = 5

2(11-13)

PREF = 2.25
N = 8

3(14-20)

PREF = 3.54
N = 37

4(21-30)

PREF = 2.67
N = 18

5(31-40)

PREF = 2.88
N = 8

6(41-120)

PREF = 3.43
N = 7

Table 11
Relationship among Graduate Research Assistants' (GRAs)
Preferences for Teaching or Research (PREF),
Pure and Applied Sciences (Science 2), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	0.608	1	0.608	0.259	0.614
HRS	3.701	5	0.740	0.316	0.899
Science 2 X HRS	7.127	4	1.782	0.761	0.559
Error	67.939	29	2.343		
Total	79.775	39	2.046		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	0.608	1	0.608	0.267	0.609
HRS	3.701	5	0.740	0.325	0.894
Error	75.065	33	2.275		
Total	79.775	39	2.046		

Means

Pure Sciences

PREF = 3.73
N = 30

Applied Sciences

PREF = 4.10
N = 10

Hours

1(0-10)

PREF = 4.00
N = 2

2(11-13)

PREF = 5.00
N = 2

3(14-20)

PREF = 3.59
N = 17

4(21-30)

PREF = 4.00
N = 4

5(31-40)

PREF = 4.00
N = 6

6(41-120)

PREF = 3.78
N = 9

Life System/Nonlife System Sciences

To determine the significance of Life System and Non-life System sciences and hours worked per week in predicting a preference for teaching or research, an analysis of variance (ANOVA) was performed. The dependent variable was preference for teaching or research (PREF). Independent variables were hours worked per week (HRS) and Life System/Nonlife System sciences (Science 3). Tables 12 through 14 show the results of these ANOVA statements. The analyses were first performed with the interaction term (Science 3 X HRS) included in the equation. The interaction terms were not significant at the .05 level of statistical significance for any of the three levels of graduate assistant classifications. A second analysis was performed with the interaction term deleted. The results of the second ANOVAs are also shown in Tables 12 through 14.

For all three levels of graduate assistants, the Life System/Nonlife System sciences departmental classification and hours worked per week were not significant variables in predicting a preference for either teaching or research. The null hypothesis, H_{03} : There is no difference in the preference for teaching or research between graduate assistants in Life System and Nonlife System sciences for each of three classification levels and among six categories of hours worked per week, failed to be rejected.

Table 12
 Relationship among Graduate Assistants' (GAs)
 Preferences for Teaching or Research (PREF),
 Life System and Nonlife System Sciences (Science 3), and
 Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	1.301	1	1.301	0.756	0.385
HRS	2.547	5	0.509	0.296	0.915
Science 3 X HRS	5.974	5	1.195	0.694	0.628
Error	504.265	293	1.721		
Total	514.184	304	1.691		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	1.301	1	1.301	0.760	0.384
HRS	2.547	5	0.509	0.298	0.914
Error	510.239	298	1.712		
Total	514.184	304	1.691		

Means

Life System Sciences

PREF = 3.61
 N = 109

Nonlife System Sciences

PREF = 3.46
 N = 196

Hours

1(0-10)

PREF = 3.57
 N = 23

2(11-13)

PREF = 3.55
 N = 67

3(14-20)

PREF = 3.48
 N = 103

4(21-30)

PREF = 3.35
 N = 48

5(31-40)

PREF = 3.61
 N = 33

6(41-120)

PREF = 3.68
 N = 31

Table 13
Relationship among Graduate Teaching Assistants' (GTAs)
Preferences for Teaching or Research (PREF),
Life System and Nonlife System Sciences (Science 3), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	0.935	1	0.935	0.481	0.490
HRS	15.501	5	3.100	1.595	0.173
Science 3 X HRS	2.377	5	0.475	0.245	0.941
Error	137.967	71	1.943		
Total	158.795	82	1.937		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	0.935	1	0.935	0.506	0.479
HRS	15.501	5	3.100	1.679	0.150
Error	140.344	76	1.847		
Total	158.795	82	1.937		

Means

Life System Sciences

PREF = 3.30
N = 43

Nonlife System Sciences

PREF = 2.93
N = 40

Hours

1(0-10)
PREF = 3.00
N = 5

2(11-13)
PREF = 2.25
N = 8

3(14-20)
PREF = 3.54
N = 37

4(21-30)
PREF = 2.67
N = 18

5(31-40)
PREF = 2.88
N = 8

6(41-120)
PREF = 3.43
N = 7

Table 14
 Relationship among Graduate Research Assistants' (GRAs)
 Preferences for Teaching or Research (PREF),
 Life System and Nonlife System Sciences (Science 3), and
 Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	0.472	1	0.472	0.200	0.658
HRS	4.154	5	0.831	0.353	0.876
Science 3 X HRS	6.896	4	1.724	0.732	0.578
Error	68.306	29	2.355		
Total	79.775	39	2.046		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	0.472	1	0.472	0.207	0.652
HRS	4.154	5	0.831	0.365	0.869
Error	75.202	33	2.279		
Total	79.775	39	2.046		

Means

Life System Sciences

PREF = 3.91
 N = 23

Nonlife System Sciences

PREF = 3.71
 N = 17

Hours

1(0-10)
 PREF = 4.00
 N = 2

2(11-13)
 PREF = 5.00
 N = 2

3(14-20)
 PREF = 3.59
 N = 17

4(21-30)
 PREF = 4.00
 N = 4

5(31-40)
 PREF = 4.00
 N = 6

6(41-120)
 PREF = 3.78
 N = 9

Job Satisfaction

- The second set of null hypotheses was
- H₀₄: There is no difference in the job satisfaction between graduate assistants in Hard and Soft sciences for each of three classification levels and among six categories of hours worked per week.
- H₀₅: There is no difference in the job satisfaction between graduate assistants in Pure and Applied sciences for each of three classification levels and among six categories of hours worked per week.
- H₀₆: There is no difference in the job satisfaction between graduate assistants in Life System and Nonlife System sciences for each of three classification levels and among six categories of hours worked per week.

Job satisfaction was attained by additively combining each graduate assistant's response to the questionnaire items numbered 17, 18 and 19 (see Appendix B):

17. My assigned work load as a GA is appropriate in relation to my present course load.
18. My salary as a GA is fair.
19. I have adequate office space.

The transposed response categories carried weights of

- | | | |
|---|---|-------------------|
| 5 | = | Strongly agree |
| 4 | = | Agree |
| 3 | = | Undecided |
| 2 | = | Disagree |
| 1 | = | Strongly disagree |

The combined scores ranged from a poor level of job satisfaction equal to 3 to a high level of job satisfaction of 15. The results of the Analyses of Variance for subhypotheses H₀₄, H₀₅, and H₀₆ are shown in Tables 15 through 23.

Hard/Soft Sciences

To determine the significance of the dependent variable job satisfaction (JOBSAT) for Hard and Soft sciences, an analysis of variance (ANOVA) was performed. Hard and Soft sciences (Science 1) and hours worked per week (HRS) were the independent variables. The ANOVA was performed first with the interaction term, Science 1 X HRS, included in the equation. As Tables 15 through 17 show, the interaction terms were not significant at the .05 level of statistical significance for all three levels of graduate assistantship classifications. A second ANOVA was performed with the interaction term deleted. The results of the second ANOVAs are also shown in Tables 15 through 17.

Hard and Soft sciences were not significant predictors of job satisfaction for all three classifications of graduate assistantships. With the exception of GAs, hours worked per week was not a significant predictor of job satisfaction. For GAs in Hard and Soft sciences, hours worked per week (HRS) was a significant predictor of job satisfaction.

The Scheffe technique was used to determine specific differences between groups. The .05 level of statistical significance was chosen as the level for the family of comparisons. Table 15 shows confidence intervals for all possible pairwise group comparisons. Significant differences

Table 15
 Relationship among Graduate Assistants' (GAs)
 Job Satisfaction (JOBSAT),
 Hard and Soft Sciences (Science 1), and
 Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	13.296	1	13.296	2.184	0.141
HRS	86.840	5	17.368	2.852	0.016
Science 1 X HRS	24.550	5	4.910	0.806	0.546
Error	1784.115	293	6.089		
Total	1909.134	304	6.280		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	13.296	1	13.296	2.191	0.140
HRS	86.840	5	17.368	2.862	0.015
Error	1808.665	298	6.069		
Total	1909.134	304	6.280		

Means

Hard Sciences

JOBSAT = 9.76
 N = 225

Soft Sciences

JOBSAT = 9.28
 N = 80

Hours

1(0-10)

JOBSAT = 10.61
 N = 23

2(11-13)

JOBSAT = 10.04
 N = 67

3(14-20)

JOBSAT = 9.62
 N = 103

4(21-30)

JOBSAT = 8.67
 N = 48

5(31-40)

JOBSAT = 9.94
 N = 33

6(41-120)

JOBSAT = 9.19
 N = 31

Table 15--continued

<u>Confidence Intervals</u>	
Group 1 VS Group 2 (1.74,-.60)	*Group 3 VS Group 4 (1.83,.07)
Group 1 VS Group 3 (2.13,-.15)	Group 3 VS Group 5 (.7,-1.34)
*Group 1 VS Group 4 (3.19,.69)	Group 3 VS Group 6 (1.48,-.62)
Group 1 VS Group 5 (2.01,-.67)	*Group 4 VS Group 5 (-.13,-2.41)
*Group 1 VS Group 6 (2.79,.05)	Group 4 VS Group 6 (.65,-1.69)
Group 2 VS Group 3 (1.21,-.37)	Group 5 VS Group 6 (2.01,-.51)
*Group 2 VS Group 4 (2.3,.44)	
Group 2 VS Group 5 (1.18,-.98)	
Group 2 VS Group 6 (1.93,-.23)	

*indicates significant differences between groups

Table 16
Relationship among Graduate Teaching Assistants' (GTAs)
Job Satisfaction (JOBSAT),
Hard and Soft Sciences (Science 1), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	3.198	1	3.198	0.447	0.506
HRS	18.567	5	3.713	0.518	0.761
Science 1 X HRS	41.787	5	8.357	1.167	0.334
Error	508.545	71	7.163		
Total	571.229	82	6.966		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	3.198	1	3.198	0.442	0.508
HRS	18.567	5	3.713	0.513	0.766
Error	550.333	76	7.241		
Total	571.229	82	6.966		

Means

Hard Sciences

JOBSAT = 8.74
N = 42

Soft Sciences

JOBSAT = 9.07
N = 41

Hours

1(0-10)

JOBSAT = 9.80
N = 5

2(11-13)

JOBSAT = 9.88
N = 8

3(14-20)

JOBSAT = 8.68
N = 37

4(21-30)

JOBSAT = 8.56
N = 18

5(31-40)

JOBSAT = 9.38
N = 8

6(41-120)

JOBSAT = 8.71
N = 7

Table 17
Relationship among Graduate Research Assistants' (GRAs)
Job Satisfaction (JOBSAT),
Hard and Soft Sciences (Science 1), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	8.053	1	8.053	1.140	0.295
HRS	13.440	5	2.688	0.381	0.858
Science 1 X HRS	45.872	5	9.174	1.299	0.293
Error	197.729	28	7.062		
Total	264.975	39	6.794		

The interaction term was not significant at the .05 level. In a second analysis the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	8.053	1	8.053	1.091	0.304
HRS	13.440	5	2.688	0.364	0.869
Error	243.600	33	7.382		
Total	264.975	39	6.794		

Means

Hard Sciences

JOBSAT = 10.12
N = 25

Soft Sciences

JOBSAT = 9.20
N = 15

Hours

1(0-10)
JOBSAT = 10.00
N = 2

2(11-13)
JOBSAT = 10.00
N = 2

3(14-20)
JOBSAT = 10.12
N = 17

4(21-30)
JOBSAT = 9.50
N = 4

5(31-40)
JOBSAT = 10.33
N = 6

6(41-120)
JOBSAT = 8.78
N = 9

were found between groups 1 and 4, 1 and 6, 2 and 4, 3 and 4, and 4 and 5. Those GAS in group 4 (working 21 to 30 hours per week) were the least satisfied of all GAS. Surprisingly, there was no significant difference in job satisfaction between those who worked 21 to 30 hours per week (group 4) and those who worked more than 41 hours per week (group 6). Group 6 was less satisfied than group 1, also.

From the results of the ANOVA, it was shown that the classification as Hard or Soft sciences was not important in predicting job satisfaction (JOBSAT). For GTAs and GRAs in Hard and Soft sciences, hours worked per week was not an accurate predictor of job satisfaction. However, for GAS hours worked per week was significant in predicting job satisfaction. Those GAS in the Hard and Soft sciences who worked 21 to 30 hours per week were the least satisfied.

The null hypothesis, H_{04} : There is no difference in the job satisfaction between graduate assistants in Hard and Soft sciences for each of three classification levels and among six categories of hours worked per week, failed to be rejected for GTAs and GRAs. However, for GAS hours worked per week was significant in predicting job satisfaction. The Hard/Soft sciences categories were not significant in predicting job satisfaction. The null hypothesis, H_{04} , was partially rejected.

Pure/Applied Sciences

Tables 18 through 20 show the analysis of H_{05} which was concerned with predicting job satisfaction through the Pure and Applied sciences categories (Science 2) and hours worked per week (HRS). An analysis of variance was performed for each of the three classifications of graduate assistants. In the first analysis, the interaction term (Science 2 X HRS) was included in the equation. Tables 18 through 20 show the results of the first analysis. For all three classification levels, the interaction term was not significant at the .05 level of statistical significance.

The ANOVA was performed a second time with the interaction term deleted from the equation. The results of the second analyses are also shown in Tables 18 through 20.

For GAs, the Pure and Applied sciences categories were a significant predictor of job satisfaction (JOBSAT) (see Table 18). Those GAs in the Applied sciences were significantly more satisfied with their working conditions than those GAs in Pure sciences. The Scheffe technique was used to determine specific differences between groups working different amounts of hours per week. Those GAs working 21 to 30 hours per week were the least satisfied with their working conditions. Those GAs working 41 or more hours per week were not as satisfied with their working conditions as

Table 18
Relationship among Graduate Assistants' (GAs)
Job Satisfaction (JOBSAT),
Pure and Applied Sciences (Science 2), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	78.024	1	78.024	13.459	0.000
HRS	86.734	5	17.347	2.992	0.012
Science 2 X HRS	45.409	5	9.082	1.567	0.169
Error	1698.527	293	5.797		
Total	1909.134	304	6.280		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	78.024	1	78.024	13.333	0.000
HRS	86.734	5	17.347	2.964	0.013
Error	1743.937	298	5.852		
Total	1909.134	304	6.280		

Means

Pure Sciences

JOBSAT = 9.27
N = 202

Applied Sciences

JOBSAT = 10.34
N = 103

Hours

1(0-10)

JOBSAT = 10.61
N = 23

2(11-13)

JOBSAT = 10.04
N = 67

3(14-20)

JOBSAT = 9.62
N = 103

4(21-30)

JOBSAT = 8.67
N = 48

5(31-40)

JOBSAT = 9.94
N = 33

6(41-120)

JOBSAT = 9.19
N = 31

Table 18--continued

<u>Confidence Intervals</u>	
Group 1 VS Group 2 (1.74,-.60)	*Group 3 VS Group 4 (1.83,.07)
Group 1 VS Group 3 (2.1,-.12)	Group 3 VS Group 5 (.67,-1.31)
*Group 1 VS Group 4 (3.17,.71)	Group 3 VS Group 6 (1.45,-.59)
Group 1 VS Group 5 (1.98,-.64)	*Group 4 VS Group 5 (-.16,-2.38)
*Group 1 VS Group 6 (2.76,.08)	Group 4 VS Group 6 (.62,-1.66)
Group 2 VS Group 3 (1.18,-.34)	Group 5 VS Group 6 (2.01,-.51)
*Group 2 VS Group 4 (2.30,.44)	
Group 2 VS Group 5 (1.15,-.95)	
Group 2 VS Group 6 (1.93,-.23)	

*indicates significant differences between groups

Table 19
Relationship among Graduate Teaching Assistants' (GTAs)
Job Satisfaction (JOBSAT),
Pure and Applied Sciences (Science 2), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	24.459	1	24.459	3.433	0.068
HRS	19.778	5	3.956	0.555	0.734
Science 2 X HRS	9.036	3	3.012	0.423	0.737
Error	529.036	73	7.124		
Total	571.229	82	6.966		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	24.459	1	24.459	3.514	0.065
HRS	19.778	5	3.956	0.568	0.724
Error	529.072	76	6.961		
Total	571.229	82	6.966		

Means

Pure Sciences

JOBSAT = 8.69
N = 71

Applied Sciences

JOBSAT = 10.17
N = 12

Hours

1(0-10)
JOBSAT = 9.80
N = 5

2(11-13)
JOBSAT = 9.88
N = 8

3(14-20)
JOBSAT = 8.68
N = 37

4(21-30)
JOBSAT = 8.56
N = 18

5(31-40)
JOBSAT = 9.38
N = 8

6(41-120)
JOBSAT = 8.71
N = 7

Table 20
Relationship among Graduate Research Assistants' (GRAs)
Job Satisfaction (JOBSAT),
Pure and Applied Sciences (Science 2), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	14.434	1	14.434	2.383	0.133
HRS	15.081	5	3.016	0.498	0.775
Science 2 X HRS	61.593	4	15.398	2.543	0.061
Error	175.626	29	6.056		
Total	264.975	39	6.794		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	14.434	1	14.434	2.008	0.166
HRS	15.081	5	3.016	0.420	0.832
Error	237.219	33	7.188		
Total	264.975	39	6.794		

Means

Pure Sciences

JOBSAT = 10.10
N = 30

Applied Sciences

JOBSAT = 8.80
N = 10

Hours

1(0-10)
JOBSAT = 10.00
N = 2

2(11-13)
JOBSAT = 10.00
N = 2

3(14-20)
JOBSAT = 10.12
N = 17

4(21-30)
JOBSAT = 9.50
N = 4

5(31-40)
JOBSAT = 10.33
N = 6

6(41-120)
JOBSAT = 8.78
N = 9

those working only 10 hours or less per week. There were no significant differences in job satisfaction among the other group comparisons.

Among Graduate Teaching Assistants (GTAs) and Graduate Research Assistants (GRAs), neither the Pure or Applied science categories nor hours worked per week was significant in predicting job satisfaction. Tables 19 and 20 show the results of the analyses of variances for GTAs and GRAs.

The null hypothesis, H_{05} : There is no difference in the job satisfaction between graduate assistants in Pure and Applied sciences for each of three classification levels and among six categories of hours worked per week, failed to be rejected for both GTAs and GRAs. However, for GAs both Pure and Applied sciences and hours worked per week were significant in predicting job satisfaction. The null hypothesis was rejected for GAs.

Life System/Nonlife System Sciences

To determine the significance of the dependent variable job satisfaction (JOBSAT) for Life System and Nonlife System sciences and hours worked per week, an analysis of variance (ANOVA) was performed. Life System and Nonlife System sciences (Science 3) and hours worked per week (HRS) were the independent variables. The ANOVA was performed first with the interaction term, Science 3 X HRS, included

in the equation. As Tables 21 through 23 show, the interaction terms were not significant at the .05 level of statistical significance for all three levels of graduate assistantship classifications. A second ANOVA was performed with the interaction term deleted. The results of the second ANOVAs are also shown in Tables 21 through 23.

The Life System and Nonlife system sciences categories were not significant predictors of job satisfaction for all three classifications of graduate assistantships. For Graduate Teaching Assistants (GTAs) and Graduate Research Assistants (GRAs), hours worked per week was not a significant predictor of job satisfaction either.

For Graduate Assistants (GAs), the number of hours worked per week was significant in predicting satisfaction with working conditions. The Scheffe technique was used to determine specific differences between groups. The level of statistical significance was controlled at the .05 level for the whole family of comparisons. Table 21 shows the confidence intervals for all possible pairwise contrasts. Significant differences were found between groups 1 and 4, 1 and 6, 2 and 4, 3 and 4, and 4 and 5. Those GAs who worked 21 to 30 hours per week (Group 4) were the least satisfied with their work situation. Group 6 (those working more than 41 hours per week) were less satisfied than those working 10 hours or less per week.

Table 21
Relationship among Graduate Assistants' (GAs)
Job Satisfaction (JOBSAT),
Life System and Nonlife System Sciences (Science 3), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	17.304	1	17.304	2.896	0.090
HRS	93.590	5	18.718	3.132	0.009
Science 3 X HRS	53.608	5	10.722	1.794	0.114
Error	1751.049	293	5.976		
Total	1909.134	304	6.280		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	17.304	1	17.304	2.857	0.092
HRS	93.590	5	18.718	3.091	0.010
Error	1804.657	298	6.056		
Total	1909.134	304	6.280		

Means

Life System Sciences

JOBSAT = 9.38
N = 109

Nonlife System Sciences

JOBSAT = 9.77
N = 196

Hours

1(0-10)
JOBSAT = 10.61
N = 23

2(11-13)
JOBSAT = 10.04
N = 67

3(14-20)
JOBSAT = 9.62
N = 103

4(21-30)
JOBSAT = 8.67
N = 48

5(31-40)
JOBSAT = 9.94
N = 33

6(41-120)
JOBSAT = 9.19
N = 31

Table 21--continued

<u>Confidence Intervals</u>	
Group 1 VS Group 2 (1.74,-.60)	*Group 3 VS Group 4 (1.83,.07)
Group 1 VS Group 3 (2.13,-.15)	Group 3 VS Group 5 (.70,-1.34)
*Group 1 VS Group 4 (3.19,.69)	Group 3 VS Group 6 (1.48,-.62)
Group 1 VS Group 5 (2.01,-.67)	*Group 4 VS Group 5 (-.13,-2.41)
*Group 1 VS Group 6 (2.79,.05)	Group 4 VS Group 6 (.65,-1.69)
Group 2 VS Group 3 (1.21,-.37)	Group 5 VS Group 6 (2.01,-.51)
*Group 2 VS Group 4 (2.30,.44)	
Group 2 VS Group 5 (1.18,-.98)	
Group 2 VS Group 6 (1.93,-.23)	

*indicates significant differences between groups

Table 22
Relationship among Graduate Teaching Assistants' (GTAs)
Job Satisfaction (JOBSAT),
Life System and Nonlife System Sciences (Science 3), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	6.225	1	6.225	0.910	0.343
HRS	18.236	5	3.647	0.533	0.751
Science 3 X HRS	61.549	5	12.310	1.799	0.124
Error	485.758	71	6.842		
Total	571.229	82	6.966		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	6.225	1	6.225	0.864	0.355
HRS	18.236	5	3.647	0.506	0.771
Error	547.306	76	7.201		
Total	571.229	82	6.966		

Means

Life System Sciences

JOBSAT = 8.65
N = 43

Nonlife System Sciences

JOBSAT = 9.18
N = 40

Hours

1(0-10)
JOBSAT = 9.80
N = 5

2(11-13)
JOBSAT = 9.88
N = 8

3(14-20)
JOBSAT = 8.68
N = 37

4(21-30)
JOBSAT = 8.56
N = 18

5(31-40)
JOBSAT = 9.38
N = 8

6(41-120)
JOBSAT = 8.71
N = 7

Table 23
 Relationship among Graduate Research Assistants' (GRAs)
 Job Satisfaction (JOBSAT),
 Life System and Nonlife System Sciences (Science 3), and
 Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	1.436	1	1.436	0.196	0.662
HRS	13.261	5	2.652	0.361	0.871
Science 3 X HRS	37.329	4	9.332	1.271	0.304
Error	212.889	29	7.341		
Total	264.975	39	6.794		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	1.436	1	1.436	0.189	0.666
HRS	13.261	5	2.652	0.350	0.879
Error	250.217	33	7.582		
Total	264.975	39	6.794		

Means

Life System Sciences

JOBSAT = 9.61
N = 23

Nonlife System Sciences

JOBSAT = 10.00
N = 17

Hours

1(0-10)

JOBSAT = 10.00
N = 2

2(11-13)

JOBSAT = 10.00
N = 2

3(14-20)

JOBSAT = 10.12
N = 17

4(21-30)

JOBSAT = 9.50
N = 4

5(31-40)

JOBSAT = 10.33
N = 6

6(41-120)

JOBSAT = 8.78
N = 9

From the analysis of variance, it was shown that the classification of Life System or Nonlife System science was not significant in predicting job satisfaction. For GTAs and GRAs in Life System and Nonlife System sciences, hours worked per week was not an accurate predictor of job satisfaction. However for GAs, hours worked per week was significant in predicting job satisfaction. Those GAs in the Life System and Nonlife System sciences who worked 21 to 30 hours per week were the least satisfied.

The null hypothesis, H_{06} : There is no difference in the job satisfaction between graduate assistants in Life System and Nonlife System sciences for each of three classification levels and among six categories of hours worked per week, failed to be rejected for GTAs and GRAs. However, for GAs hours worked per week was significant in predicting job satisfaction. The null hypothesis, H_{06} , was partially rejected for GAs only.

Supervision

The third set of null hypotheses was

- H_{07} : There is no difference in satisfaction with supervision from faculty between graduate assistants in Hard and Soft sciences for each of three classification levels and among six different categories of hours worked per week.
- H_{08} : There is no difference in satisfaction with supervision from faculty between graduate assistants in Pure and Applied sciences for each of three classification levels and among six different categories of hours worked per week.

H₀₉: There is no difference in satisfaction with supervision from faculty between graduate assistants in Life System and Nonlife System sciences for each of three classification levels and among six different categories of hours worked per week.

Supervision was attained by additively combining the responses to the questionnaire items numbered 21, 22, 23, and 24 (see Appendix B):

21. I teach from materials (e.g., texts, handouts) selected by a full-time faculty member.
22. Departmental faculty are helpful in assisting me in organizing and teaching my classes.
23. I am supervised in my teaching by a faculty member who provides me with regular (weekly or bi-weekly) feedback.
24. My department provides me with basic information (e.g., how to order equipment, score tests, print materials) to help me carry out my teaching assignment.

The transposed response weights were combined as in H₀₄, H₀₅, and H₀₆ above so that a low level of supervision had a combined score of 4 while a high level of supervision had a combined score of 20. The results of the Analyses of Variances for subhypotheses H₀₇, H₀₈, and H₀₉ are shown in Tables 24 through 32.

Hard/Soft Sciences

To determine the significance of Hard and Soft sciences (Science 1) and hours worked per week (HRS) in predicting how well satisfied graduate assistants were with the level of supervision within their departments (SUPER), an

analysis of variance (ANOVA) was performed. Supervision (SUPER) was the dependent variable and Hard and Soft sciences (Science 1) and hours worked per week (HRS) were the independent variables. The interaction term, Science 1 X HRS, was included in the equation. As Tables 24, 25, and 26 show, the interaction was not significant at the .05 level of statistical significance. The ANOVA was performed a second time with the interaction term deleted. Tables 24 through 26 show the results of the second ANOVA, also.

As Tables 24 through 26 show, the Hard and Soft sciences categories were not a good predictor of satisfaction with supervision for any of the three classifications of graduate assistants. Hours worked per week were not significant predictors of satisfaction with supervision for either Graduate Assistants (GAs) or Graduate Research Assistants (GRAs).

For Graduate Teaching Assistants (GTAs), hours worked per week was significant in predicting satisfaction with the supervision provided to graduate assistants by departmental faculty. The Scheffe technique was used to determine specific differences between groups. The error rate was controlled at .05 for all possible pairwise comparisons. The results are shown in Table 25. Significant differences were found when those graduate assistants working 11 to 13 hours per week were compared with Graduate Teaching Assistants

Table 24
Relationship among Supervision (SUPER) of
Graduate Assistants (GAs),
Hard and Soft Sciences (Science 1), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	13.899	1	13.899	0.305	0.581
HRS	489.070	5	97.814	2.143	0.060
Science 1 X HRS	437.038	5	87.408	1.915	0.092
Error	13372.342	293	45.639		
Total	14320.872	304	47.108		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was dropped with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	13.899	1	13.899	0.300	0.584
HRS	489.070	5	97.814	2.111	0.064
Error	13809.380	298	46.340		
Total	14320.872	304	47.108		

Means

Hard Sciences

SUPER = 7.47
N = 225

Soft Sciences

SUPER = 8.09
N = 80

Hours

1(0-10)
SUPER = 9.30
N = 23

2(11-13)
SUPER = 9.24
N = 67

3(14-20)
SUPER = 7.62
N = 103

4(21-30)
SUPER = 7.27
N = 48

5(31-40)
SUPER = 5.70
N = 33

6(41-120)
SUPER = 5.58
N = 31

Table 25
Relationship among Supervision (SUPER) of
Graduate Teaching Assistants (GTAs),
Hard and Soft Sciences (Science 1), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	62.110	1	62.110	2.567	0.114
HRS	290.684	5	58.137	2.402	0.045
Science 1 X HRS	136.847	5	27.369	1.131	0.352
Error	1718.225	71	24.200		
Total	2185.855	82	26.657		

In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	62.110	1	62.110	2.545	0.115
HRS	290.684	5	58.137	2.382	0.046
Error	1855.072	76	24.409		
Total	2185.855	82	26.657		

Means

Hard Sciences

SUPER = 10.00
N = 42

Soft Sciences

SUPER = 8.61
N = 41

Hours

1(0-10)	2(11-13)	3(14-20)
SUPER = 9.40	SUPER = 14.38	SUPER = 8.97
N = 5	N = 8	N = 37
4(21-30)	5(31-40)	6(41-120)
SUPER = 9.39	SUPER = 7.50	SUPER = 7.14
N = 18	N = 8	N = 7

Table 26
Relationship among Supervision (SUPER) of
Graduate Research Assistants (GRAs),
Hard and Soft Sciences (Science 1), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	26.199	1	26.199	1.170	0.289
HRS	176.292	5	35.258	1.574	0.200
Science 1 X HRS	65.586	5	13.117	0.586	0.711
Error	627.162	28	22.399		
Total	896.775	39	22.994		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 1	26.199	1	26.199	1.248	0.272
HRS	176.292	5	35.258	1.680	0.167
Error	692.748	33	20.992		
Total	896.775	39	22.994		

Means

Hard Sciences

SUPER = 1.28
N = 25

Soft Sciences

SUPER = 3.00
N = 15

Hours

1(0-10)	2(11-13)	3(14-20)
SUPER = 0.00	SUPER = 0.00	SUPER = .76
N = 2	N = 2	N = 17
4(21-30)	5(31-40)	6(41-120)
SUPER = 4.50	SUPER = 0.00	SUPER = 5.11
N = 4	N = 6	N = 9

teaching 14 or more hours per week. No significant difference in satisfaction with supervision was found between Graduate Teaching Assistants working 0 to 10 hours per week and those working 11 to 13 hours per week. Those Graduate Teaching Assistants working 11 to 13 hours per week were the most satisfied with the supervision provided by departmental faculty.

The null hypothesis, H_{07} : There is no difference in satisfaction with supervision from faculty between graduate assistants in Hard and Soft sciences for each of three classification levels and among six different categories of hours worked per week, was rejected for only GTAs. The Hard/Soft categories were not significant predictors of satisfaction with supervision. With the exception of GTAs in Hard and Soft sciences, hours worked per week were not a significant predictor of satisfaction with supervision either.

Pure/Applied Sciences

An analysis of variance (ANOVA) was performed to determine how well the Pure and Applied sciences and hours worked per week could predict the level of satisfaction with supervision from departmental faculty. Supervision (SUPER) was the dependent variable, and; Pure and Applied sciences (Science 2) and hours worked per week (HRS) were the independent variables. The interaction term, Science 2 X HRS,

was included in the equation. The .05 level of statistical significance was chosen. Tables 27 through 29 show the results of the analyses of variances for the Pure and Applied sciences.

The interaction term, Science 2 X HRS, was not significant at the .05 level for any of the three categories of graduate assistants. The ANOVA was performed a second time with the interaction term deleted from the equation. The results of the second ANOVAs are also shown in Tables 27 through 29.

As Table 27 shows, both the Pure/Applied sciences categories and hours worked per week were significant predictors of satisfaction with supervision for Graduate Assistants (GAs). Those GAs in Pure sciences were significantly more satisfied with supervision from departmental faculty than were GAs in Applied sciences. The mean value for GAs in Pure sciences was 9.48 while the mean value for GAs in Applied sciences was 4.02. Before meaningful conclusions can be drawn, it should be noted that an average level of satisfaction with supervision would have yielded a score of 12. Both groups of GAs rated the level of supervision from departmental faculty below an average mark.

Hours worked per week was also significant in predicting satisfaction with supervision among GAs. In examining the means for the different categories of hours worked per week (see Table 27), it may be seen that the mean values

decreased as the number of hours worked per week increased. The Scheffe technique was used to determine specific differences between groups. The error rate was controlled at the .05 level for the family of comparisons. The resulting confidence intervals are also shown in Table 27. Significant differences were found when those GAs working 0 to 10 hours per week (Group 1) and those working 11 to 13 hours per week (Group 2) were compared with those GAs working 31 to 40 hours per week (Group 5) or 41 to 120 hours per week (Group 6). Those GAs working less hours per week expressed greater satisfaction with supervision from departmental faculty than those working greater numbers of hours per week.

For Graduate Teaching Assistants (GTAs) and Graduate Research Assistants (GRAs), neither the Pure/Applied science designation nor the number of hours worked per week was significant in predicting satisfaction with supervision. See Tables 28 and 29 for the results of these two analyses.

The null hypothesis, H_{08} : There is no difference in satisfaction with supervision from faculty between graduate assistants in Pure and Applied sciences for each of three classification levels and among six different categories of hours worked per week, failed to be rejected for GTAs and GRAs. However, for GAs, both the Pure/Applied categories and hours worked per week were significant predictors of satisfaction with supervision. The null hypothesis was rejected for GAs.

Table 27
Relationship among Supervision (SUPER) of
Graduate Assistants (GAs),
Pure and Applied Sciences (Science 2), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	2068.677	1	2068.677	51.995	-0.000
HRS	535.735	5	107.147	2.693	0.021
Science 2 X HRS	97.373	5	19.475	0.489	0.784
Error	11657.229	293	39.786		
Total	14320.872	304	47.108		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	2068.677	1	2068.677	52.445	-0.000
HRS	535.735	5	107.147	2.716	0.020
Error	11754.602	298	39.445		
Total	14320.872	304	47.108		

Means

Pure Sciences

SUPER = 9.48
N = 202

Applied Sciences

SUPER = 4.02
N = 103

Hours

1(0-10)
SUPER = 9.30
N = 23

2(11-13)
SUPER = 9.24
N = 67

3(14-20)
SUPER = 7.62
N = 103

4(21-30)
SUPER = 7.27
N = 48

5(31-40)
SUPER = 5.70
N = 33

6(41-120)
SUPER = 5.58
N = 31

Table 27--continued

<u>Confidence Intervals</u>	
Group 1 VS Group 2 (3.06,-2.94)	Group 3 VS Group 4 (2.6,-1.90)
Group 1 VS Group 3 (4.57,-1.21)	Group 3 VS Group 5 (4.52,-.68)
Group 1 VS Group 4 (5.21,-1.15)	Group 3 VS Group 6 (4.7,-.62)
*Group 1 VS Group 5 (7.05,.15)	Group 4 VS Group 5 (4.46,-1.32)
*Group 1 VS Group 6 (7.19,.25)	Group 4 VS Group 6 (4.64,-1.26)
Group 2 VS Group 3 (3.63,-.39)	Group 5 VS Group 6 (3.36,-3.12)
Group 2 VS Group 4 (4.36,-.42)	
*Group 2 VS Group 5 (6.26,.82)	
*Group 2 VS Group 6 (6.43,.89)	

*indicates significant differences between groups

Table 28
Relationship among Supervision (SUPER) of
Graduate Teaching Assistants (GTAs),
Pure and Applied Sciences (Science 2), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	52.250	1	52.250	2.075	0.154
HRS	253.841	5	50.768	2.016	0.186
Science 2 X HRS	26.918	3	8.973	0.356	0.785
Error	1838.016	73	25.178		
Total	2185.855	82	26.657		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	52.250	1	52.250	2.129	0.149
HRS	253.841	5	50.768	2.069	0.079
Error	1864.933	76	24.539		
Total	2185.855	82	26.657		

Means

Pure Sciences

SUPER = 8.94
N = 71

Applied Sciences

SUPER = 11.50
N = 12

Hours

1(0-10)

SUPER = 9.40
N = 5

2(11-13)

SUPER = 14.38
N = 8

3(14-20)

SUPER = 8.97
N = 37

4(21-30)

SUPER = 9.39
N = 37

5(31-40)

SUPER = 7.50
N = 8

6(41-120)

SUPER = 7.14
N = 7

Table 29
Relationship among Supervision (SUPER) of
Graduate Research Assistants (GRAs),
Pure and Applied Sciences (Science 2), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	43.926	1	43.926	2.049	0.163
HRS	172.345	5	34.469	1.608	0.189
Science 2 X HRS	53.308	4	13.327	0.622	0.651
Error	621.714	29	21.438		
Total	896.775	39	22.994		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 2	43.926	1	43.926	2.147	0.152
HRS	172.345	5	34.469	1.685	0.166
Error	675.022	33	20.455		
Total	896.775	39	22.994		

Means

Pure Sciences

SUPER = 2.57
N = 30

Applied Sciences

SUPER = 0.00
N = 10

Hours

1(0-10)
SUPER = 0.00
N = 2

2(11-13)
SUPER = 0.00
N = 2

3(14-20)
SUPER = .76
N = 17

4(21-30)
SUPER = 4.50
N = 4

5(31-40)
SUPER = 0.00
N = 6

6(41-120)
SUPER = 5.11
N = 9

Life System/Nonlife System Sciences

To determine the significance of Life System and Non-life System sciences (Science 3) and hours worked per week (HRS) in predicting satisfaction among graduate assistants with supervision from departmental faculty, an analysis of variance (ANOVA) was performed. Supervision (SUPER) was the dependent variable, and Life System/Nonlife System sciences (Science 3) and hours worked per week (HRS) were the independent variables. The interaction term, Science 3 X HRS, was included in the equation. As Tables 30 through 32 show, the interaction term was not significant at the .05 level for any of the three classifications of graduate assistants. The ANOVA was performed a second time with the interaction term deleted from the equation. Tables 30 through 32 also show the results of the second ANOVA.

As Table 30 shows, both the Life System/Nonlife System sciences categories and hours worked per week were significant predictors of satisfaction with supervision for graduate assistants (GAs). Those GAs in Nonlife System sciences were more satisfied than were those in Life System sciences. The mean value for GAs in Nonlife System sciences was 8.16 while the mean value for Life System sciences was 6.68. As was noted with GAs in Pure and Applied sciences,

the mean for each was below the average level of satisfaction. An average level of satisfaction with supervision would equal 12. Both groups of GAs rated the level of supervision below that average.

Hours worked per week was also a significant predictor of satisfaction with supervision for GAs in Life System and Nonlife System sciences. In examining mean values of supervision (SUPER) for each of the six categories of hours worked per week (see Table 30), it may be seen that means decreased in value as hours worked per week increased. The Scheffe technique was used to determine specific differences between groups. The error rate was controlled at the .05 level for the whole family of comparisons. The resulting confidence intervals are also shown in Table 30. Significant differences between groups were found only when comparing those GAs working 11 to 13 hours per week (Group 2) with those working more than 30 hours per week (Groups 5 and 6). Those GAs working 11 to 13 hours per week expressed greater satisfaction with supervision from departmental faculty than those working more than 30 hours per week.

For Graduate Teaching Assistants (GTAs) and Graduate Research Assistants (GRAs), neither the Life System/Nonlife System sciences categorization nor the number of hours worked per week was significant in predicting satisfaction with supervision. See Tables 31 and 32 for the results of these two analyses.

Table 30
Relationship among Supervision (SUPER) of
Graduate Assistants (GAs),
Life System and Nonlife System Sciences (Science 3), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	228.493	1	228.493	5.015	0.026
HRS	571.752	5	114.350	2.510	0.030
Science 3 X HRS	245.927	5	49.185	1.080	0.372
Error	13348.859	293	45.559		
Total	14320.872	304	47.108		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	228.493	1	228.493	5.009	0.026
HRS	571.752	5	114.350	2.507	0.030
Error	13594.785	298	45.620		
Total	14320.872	304	47.108		

Means

Life System Sciences

SUPER = 6.68
N = 109

Nonlife System Sciences

SUPER = 8.16
N = 196

Hours

1(0-10)
SUPER = 9.30
N = 23

2(11-13)
SUPER = 9.24
N = 67

3(14-20)
SUPER = 7.62
N = 103

4(21-30)
SUPER = 7.27
N = 48

5(31-40)
SUPER = 5.70
N = 33

6(41-120)
SUPER = 5.58
N = 31

Table 30--continued

<u>Confidence Intervals</u>	
Group 1 VS Group 2 (3.27,-3.15)	Group 3 VS Group 4 (2.77,-2.07)
Group 1 VS Group 3 (4.80,-1.44)	Group 3 VS Group 5 (4.72,-.88)
Group 1 VS Group 4 (5.45,-1.39)	Group 3 VS Group 6 (4.84,-.76)
Group 1 VS Group 5 (7.27,-.07)	Group 4 VS Group 5 (4.69,-1.55)
Group 1 VS Group 6 (7.46,-.02)	Group 4 VS Group 6 (4.87,-1.49)
Group 2 VS Group 3 (3.78,-.54)	Group 5 VS Group 6 (3.59,-3.35)
Group 2 VS Group 4 (4.53,-.59)	
*Group 2 VS Group 5 (6.46,.62)	
*Group 2 VS Group 6 (6.63,.69)	

*indicates significant differences between groups

Table 31
Relationship among Supervision (SUPER) of
Graduate Teaching Assistants (GTAs),
Life System and Nonlife System Sciences (Science 3), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	25.621	1	25.621	1.031	0.313
HRS	249.315	5	49.863	2.007	0.088
Science 3 X HRS	127.441	5	25.488	1.026	0.409
Error	1764.121	71	24.847		
Total	2185.855	82	26.657		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	25.621	1	25.621	1.029	0.314
HRS	249.315	5	49.863	2.003	0.088
Error	1891.562	76	24.889		
Total	2185.855	82	26.657		

Means

Life System Sciences

SUPER = 10.02
N = 43

Nonlife System Sciences

SUPER = 8.55
N = 40

Hours

1(0-10)

SUPER = 9.40
N = 5

2(11-13)

SUPER = 14.38
N = 8

3(14-20)

SUPER = 8.97
N = 37

4(21-30)

SUPER = 9.39
N = 18

5(31-40)

SUPER = 7.50
N = 8

6(41-120)

SUPER = 7.14
N = 7

Table 32
Relationship among Supervision (SUPER) of
Graduate Research Assistants (GRAs),
Life System and Nonlife System Sciences (Science 3), and
Hours Worked per Week (HRS)

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	1.054	1	1.054	0.044	0.836
HRS	176.035	5	35.207	1.454	0.235
Science 3 X HRS	15.505	4	3.876	0.160	0.957
Error	702.389	29	24.220		
Total	896.775	39	22.994		

The interaction term was not significant at the .05 level. In a second analysis, the interaction was deleted with the following results:

Source	Sum of Squares	d.f.	Mean Square	F	Signif. of F
Science 3	1.054	1	1.054	0.048	0.827
HRS	176.035	5	35.207	1.618	0.183
Error	717.894	33	21.754		
Total	896.775	39	22.994		

Means

Life System Sciences

SUPER = 1.70
N = 23

Nonlife System Sciences

SUPER = 2.24
N = 17

Hours

1(0-10)
SUPER = 0.00
N = 2

2(11-13)
SUPER = 0.00
N = 2

3(14-20)
SUPER = .76
N = 17

4(21-30)
SUPER = 4.50
N = 4

5(31-40)
SUPER = 0.00
N = 6

6(41-120)
SUPER = 5.11
N = 9

The null hypothesis, H_{09} : There is no difference in satisfaction with supervision from faculty between graduate assistants in Life System and Nonlife System sciences for each of three classification levels and among six different categories of hours worked per week, failed to be rejected for GTAs and GRAs. However, for GAs, both the Life System/Nonlife System categories and hours worked per week were significant predictors of satisfaction with supervision. The null hypothesis was rejected for GAs.

Summary of the Analyses of Variances

The purpose of the study was to test Biglan's classification scheme of academic task preferences as it applied to graduate students employed as graduate assistants. Twenty-seven separate analyses were conducted to answer the nine subhypotheses related to task preference, job satisfaction, and satisfaction with supervision provided by departmental faculty. Biglan had found three categorizations of academic departments to be valid in predicting task preferences for faculty. Those same categorizations of Hard/Soft, Pure/Applied, and Life System/Nonlife System sciences were used in this study. Graduate assistants were also separated by their classifications as Graduate Assistants (GAs), Graduate Teaching Assistants (GTAs), and Graduate Research Assistants (GRAs). Table 33 is a summary of the results of the analyses of variances.

Table 33
 Summary of the Analyses of Variances for the Variables Hard/Soft, Pure/Applied, and Life System/Nonlife System Sciences; Preference for Teaching or Research; Job Satisfaction; Supervision; and Hours Worked per Week

Preference for Teaching or Research	Hard/Soft		Hours		Pure/Applied		Hours		Life System/ Nonlife System		Hours
GA	X										
GTA	X		X								
GRA	X										
Job Satisfaction											
GA			X		X		X				X
GTA											
GRA											
Supervision											
GA					X		X		X		X
GTA			X								
GRA											

X denotes significant differences at the .05 level

As the table shows, significant differences were most often found among GAs for the three dimensions measured. This may have been due to the large number of GAs in the study or to GAs behaving more as a group than the other two classification levels. Only the significant preference for teaching or research was evident across all graduate assistant classifications in the Hard and Soft sciences categorization. Responses by GAs in the Pure and Applied sciences were significant in predicting job satisfaction. GAs in both Pure/Applied sciences and Life System/Nonlife System sciences responded so as to indicate significant differences in amounts of supervision provided by departmental faculty. Hours worked per week was not as important in predicting job satisfaction or satisfaction with supervision as might have been expected. Generally, if the academic departmental categorizations were significant, hours worked per week was also significant. However, the significance of hours worked per week was often weaker than for the academic department classification (see Tables 7, 25, 27 and 30).

Discriminant Analysis

The last step in the analysis of the data from this study was the stepwise discriminant analysis procedure. The purpose of this analysis was to determine the ability of the variables in this study to accurately predict group membership within the Hard/Soft, Pure/Applied, and Life

System/Nonlife System departmental categorizations. The primary hypothesis tested in this study was, H_0 : There is no difference in preference for teaching or research, job satisfaction, supervision from departmental faculty, or hours worked per week when graduate assistants are classified as being in either Hard or Soft, Pure or Applied, or Life System or Nonlife System sciences.

Three separate discriminant analyses were conducted, one for each of the departmental dimensions. For the discriminant analysis, all graduate assistants were grouped together regardless of official classification. In addition to the variables (preference, job satisfaction, supervision, and hours worked per week) used in the analyses of variances, the items combined to create the variables of job satisfaction and supervision were also included in the discriminant analysis. The same variables were included in each discriminant analysis.

Discriminant analysis is a statistical procedure for finding variables that are predictive of group membership. The variable with the greatest predictive ability was selected first. In the second step, the variable which had the next highest level of predictability and which increased the predictability of group membership when combined with the first variable was chosen. The discriminant analysis procedure continued until the addition of more variables no

longer increased the ability of the variables to predict group membership. Variables that were included early in the stepwise discriminant analysis may have been deleted later in the procedure if they no longer increased predictability in combination with other variables. Because Wilks' Lambda is inversely related to R^2 ($\Lambda = 1 - R^2$), the Wilks' Lambda decreases in numerical value as the predictability of the variables increases.

Hard/Soft Sciences

Table 34 shows the results of the discriminant analysis for Hard and Soft sciences. Six variables were selected as the combination most predictive of group membership in the Hard or Soft sciences. Those variables were (1) Preference for research or teaching as measured by Item 12 on the questionnaire; (2) Item 18, My salary as a GA is fair; (3) Supervision from departmental faculty (Items 21, 22, 23, and 24 combined); (4) Item 21, I teach from materials . . . selected by a full-time faculty member; (5) Item 23, I am supervised in my teaching by a faculty member who provides me with regular . . . feedback; and (6) Hours worked per week (See Appendix B for questionnaire). As Table 34 shows, all six variables were highly significant. Furthermore, with the addition of each variable, the Wilks' Lambda decreased indicating an increasing ability to predict group membership.

Table 34
Results of the Discriminant Analysis
for Graduate Assistants
in Hard and Soft Sciences

Variable	Canonical Discriminant Functions	Wilks' Lambda	Significance
PREF	0.80205	.851649	0.0000
I 21	1.34624	.837822	0.0000
SUPER	-1.44124	.810259	0.0000
I 18	0.30484	.796905	0.0000
HRS	0.24763	.788679	0.0000
I 23	0.40147	.783470	0.0000

Actual Group	Number of Cases	Predicted Group Membership	
		Hard	Soft
Hard Sciences	295	228 77.3%	67 32.7%
Soft Sciences	137	49 35.8%	88 64.2%

% of Grouped Cases Correctly Classified: 73.15%

As indicated in Table 34, the percentage of grouped cases correctly classified was 73.15%. This was well above the criterion of 67% set for this study. The results indicated that on the basis of the responses to the above six items on the questionnaire, membership in either the Hard or Soft sciences could be accurately predicted in nearly three out of four cases.

The null hypothesis, H_0 : There is no difference in preference for teaching or research, job satisfaction, supervision from departmental faculty, and hours worked per week when graduate assistants are classified as Hard or Soft sciences, was rejected. Preference for teaching or research, supervision from departmental faculty, and hours worked per week were significant in predicting Hard or Soft sciences group membership.

Pure/Applied Sciences

The results of the discriminant analysis for Pure and Applied sciences are shown in Table 35. The discriminant analysis procedure selected five variables which, in combination, were the most predictive of group membership in either Pure or Applied sciences.

The variables selected were (1) Supervision from departmental faculty (Items 21, 22, 23, and 24 combined), (2) Job satisfaction (Items 17, 18, and 19 combined), (3) Preference for teaching or research (Item 12), (4) Hours

Table 35
Results of the Discriminant Analysis
for Graduate Assistants
in Pure and Applied Sciences

Variable	Canonical Discriminant Functions	Wilks' Lambda	Significance
SUPER	1.20975	.913778	0.0000
JOBSAT	-0.44266	.885204	0.0000
PREF	0.30102	.876683	0.0000
HRS	0.21207	.871539	0.0000
I 23	-0.37293	.867856	0.0000

Actual Group	Number of Cases	Predicted Group Membership	
		Pure	Applied
Pure Sciences	303	199 65.7%	104 34.3%
Applied Sciences	129	39 30.2%	90 69.8%

% of Grouped Cases Correctly Classified: 66.90%

worked per week, and (5) Item 23, I am supervised in my teaching by a faculty member who provides me with regular . . . feedback (see Appendix B for questionnaire). As Table 35 shows, all five variables were highly significant. With the addition of each variable, the Wilks' Lambda decreased in numerical value indicating an increase in the ability to predict group membership.

As shown in Table 35, the percentage of grouped cases correctly classified was 66.90%. This was equal to the 67% criterion set for this study. These results indicated that on the basis of the responses to the above five items from the questionnaire, membership in either Pure or Applied sciences could be predicted accurately in two out of every three cases.

The null hypothesis, H_0 : There is no difference in preference for teaching or research, job satisfaction, supervision from departmental faculty, and hours worked per week when graduate assistants are classified as Pure or Applied sciences, was rejected. Supervision from departmental faculty, job satisfaction, preference for either teaching or research, and hours worked per week were significant in predicting membership in either Pure or Applied sciences.

Life System/Nonlife System Sciences

Table 36 shows the results of the discriminant analysis for Life System and Nonlife System sciences. This

discriminant analysis procedure selected four variables, which in combination, were the most predictive of group membership in either Life System or Nonlife System sciences.

The variables selected were (1) Item 18, My salary as a GA is fair, (2) Hours worked per week, (3) Item 23, I am supervised in my teaching by a faculty member who provides me with regular . . . feedback, and (4) Supervision from departmental faculty (Items 21, 22, 23, and 24 combined). (See Appendix B for questionnaire.) As Table 36 shows, all four variables were significant below the .05 level selected for this study. With the addition of each variable, the Wilks' Lambda decreased in numerical value indicating an increase in the ability to predict group membership. With the Life System/Nonlife System sciences, the Wilks' Lambda remained very high indicating a lesser degree of predictable group membership from this configuration.

As shown in Table 36, the percentage of grouped cases correctly classified was 60.19%. This was below the 67% criterion set for the study. These results indicated that on the basis of the responses to the four variables as measured by the questionnaire, membership in either Life System or Nonlife System sciences could be predicted accurately only three times out of five.

The null hypothesis, H_0 : There is no difference in preference for teaching or research, job satisfaction, supervision from department faculty, and hours worked per week

Table 36
Results of the Discriminant Analysis
for Graduate Assistants
in Life System and Nonlife System Sciences

Variable	Canonical Discriminant Functions	Wilks' Lambda	Significance
I 18	.67823	.980475	.0036
HRS	.56152	.965590	.0005
I 23	-1.20340	.944202	.0001
SUPER	1.44406	.938403	.0001

Actual Group	Number of Cases	Predicted Group Membership	
		Life System	Nonlife System
Life System Sciences	176	104 59.1%	72 40.9%
Nonlife System Sciences	256	100 39.1%	156 60.9%

% of Grouped Cases Correctly Classified: 60.19%

when graduate assistants are classified as Life System/Nonlife System sciences, failed to be rejected. While salary, hours worked, and supervision were important to Life System/Nonlife System sciences, the pattern of responses to those items was not such that a high level of group membership could be predicted.

Summary of the Discriminant Analyses

The purpose of the discriminant analysis in this study was to determine if those variables that were significant in the analyses of variances might also determine group membership. It was found that only four to six variables were necessary to predict group membership. Supervision (Items 21, 22, 23, and 24), hours worked per week, and Item 23 were the variables found to be common to all three science configurations. Preference for teaching or research was successful in helping predict membership in either the Hard/Soft or Pure/Applied science categorizations.

The discriminant analysis was important for several reasons. First, it reinforced the results of the analyses of variances by showing that the variables selected for this study were significant in both statistical procedures. Secondly, the questionnaire items elicited statistically significant results and allowed discrimination between groups of graduate assistants. Finally, Biglan (1971) had

found in classifying faculty into Hard/Soft, Pure/Applied, or Life System/Nonlife System sciences that the Hard/Soft sciences were classified the most accurately. Pure/Applied sciences had been second and Life System/Nonlife System sciences third. The results of the discriminant analysis in this study also showed the greatest predictability for group membership for the Hard and Soft sciences, followed by the Pure and Applied sciences. The sciences for which group membership was least predictive were the Life System and Nonlife System sciences.

Summary of the Results

For graduate assistants in Hard and Soft sciences, preference for either the research or teaching academic tasks was the single most discriminating item. The analysis of variance showed that for all classifications of graduate assistantships, the Hard and Soft sciences categorization was significant in predicting a preference for either research or teaching. In the discriminant analysis, the item chosen first as being most predictive of membership in either Hard or Soft sciences was preference for teaching or research. Furthermore, group membership in either the Hard or Soft sciences could accurately be predicted nearly 75% of the time.

The analysis of variance for Pure and Applied sciences indicated statistical significance for GAs for the two dependent variables, job satisfaction and supervision from departmental faculty. However, the same findings were not evident for GTAs and GRAs. In the discriminant analysis, supervision from departmental faculty and job satisfaction were selected first and second in the list of variables that predicted group membership in either Pure or Applied sciences. While preference for teaching or research was third in the variable list for the discriminant analysis, the analysis of variance did not show statistical significance for that variable for the Pure and Applied sciences.

The results for Life System and Nonlife System sciences were less clear. The analysis of variance showed that supervision from faculty was a statistically significant dependent variable for GAs in that categorization. However, supervision was the last variable selected in the discriminant analysis for the Life System and Nonlife System sciences.

Hours worked per week was also significant in some areas in predicting preference for academic tasks and satisfaction with supervision and the job. Generally, the analysis of variance showed that hours worked per week was statistically significant when academic department categories

were also significant in predicting preferences or satisfaction. Hours worked per week was a variable that was included in each of the discriminant analyses, as well. As the review of literature described, hours spent at various academic tasks by faculty has often been used in studies of workload and task preferences (Biglan, 1971; Haggerty, 1937; McLaughlin et al., 1981; Sticklers, 1960). The results of this study show that hours worked per week is also important in studies of graduate assistant workloads.

CHAPTER V SUMMARY, IMPLICATIONS, RECOMMENDATIONS

Summary

The next two decades will be difficult ones for colleges and universities. Declining enrollments, less dollars allocated for educational purposes, and sophisticated student consumers have already and will continue to place demands on universities that have never been experienced before.

The use of graduate assistants to teach and conduct research will continue to be one method of meeting the needs of the universities and providing experience to future scholars. As the review of literature showed, several authors (Barella, 1976, Brown, 1962, and Heiss, 1970) wrote of concerns for the workloads of graduate assistants. Yet little research has been conducted on the task preferences and hourly workloads of graduate assistants.

Clark, Hartnett and Baird (1976), in their national study of graduate students, cautioned:

How graduate students are treated may well affect how they, in years to come, treat future generations of graduate students, and the extent to which members of the faculty

find an environment that is collegial or cut-throat, many have long term effects on how they go about addressing research inquiries or other scholarly undertakings. (p.175)

Faculty workloads have been the subject of numerous studies. One of the more recent studies was conducted by Biglan at the University of Illinois at Urbana-Champaign in 1971. Using a sorting system, Biglan found that faculty were able to classify academic departments into three categories: Hard or Soft, Pure or Applied, and Life System or Nonlife System sciences. Once academic departments were categorized, Biglan found significant preferences for academic tasks within the Hard/Soft, Pure/Applied, and Life System/Nonlife System categories. Smart and Elton (1975, 1976) suggested Biglan's findings were rigorous enough to support more research involving people and their environments in higher education.

The Problem

An important group of people in the higher education environment is graduate assistants. However, a problem facing education is a lack of understanding regarding graduate student assistant workloads and task preferences. Using previous studies of faculty and department chairperson task preferences and workloads as a model, task preferences for teaching or research, satisfaction with supervision, job satisfaction, and hours worked per week were studied for a selected group of graduate student assistants.

If the results of the study were statistically rigorous, suggestions for future workload assignments among graduate assistants could be made. The central focus of this study was to test Biglan's (1971) findings of task preferences as they applied to graduate assistants within the Hard/Soft, Pure/Applied and Life System/Nonlife System classifications.

The Purpose

The purpose of the study was to test Biglan's classification scheme of academic task preferences, as it applied to faculty, on a group of graduate assistants. Within the purpose of the study, four research questions were asked:

1. Will graduate assistants in academic departments classified as Hard/Soft, Pure/Applied, or Life System/Nonlife System have significantly different preferences for either teaching or research?
2. Will graduate assistants in academic departments classified as Hard/Soft, Pure/Applied, or Life System/Nonlife System exhibit less job satisfaction as the number of hours worked per week increases?
3. Will graduate assistants in academic departments classified as Hard/Soft, Pure/Applied, or Life System/Nonlife System indicate significantly different levels of supervision from departmental faculty?
4. Can various measures of task preference, job satisfaction, supervision from faculty, and hours worked per week be used to accurately predict group membership in either Hard/Soft, Pure/Applied, or Life System/Nonlife System academic departments?

The Methodology

A questionnaire was developed to measure preference for academic tasks, levels of job satisfaction, satisfaction with supervision from departmental faculty, and hours worked per week. While faculty members have additional tasks involving service and administration, graduate assistants are primarily involved in teaching or research functions. Those were the two areas of task preferences studied. Biglan (1971) had found preferences for various amounts of colleague association within some academic departments. This study used a combination of items measuring supervision from departmental faculty as a corollary to colleague association. Biglan had found that faculty spent more time on some of those tasks they enjoyed, while in other areas, time was not a factor. Hours spent per week in graduate assistantship duties was a variable. Job satisfaction was an additional variable in this study but was not found in Biglan's study (1971).

The population for the study was all graduate assistants classified as graduate assistant (GA), graduate teaching assistant (GTA), and graduate research assistant (GRA) in the thirty-four departments identified in Table 3, page 52. The data were collected at the University of Florida during the Fall semester, 1981. A sample for the pre-test of 100 graduate assistants was selected from the entire population of graduate assistants.

From the research questions, one primary hypothesis and nine subhypotheses were tested in this study. The primary hypothesis was

H₀: There is no difference in preference for teaching or research, job satisfaction, supervision from departmental faculty, or hours spent working per week when graduate assistants are classified as being in either Hard or Soft, Pure or Applied, or Life System or Nonlife System sciences.

The subhypotheses were

H₀₁: There is no difference in the preference for teaching or research between graduate assistants in Hard and Soft sciences for each of three classification levels and among six categories of hours worked per week.

H₀₂: There is no difference in the preference for teaching or research between graduate assistants in Pure and Applied sciences for each of three classification levels and among six categories of hours worked per week.

H₀₃: There is no difference in the preference for teaching or research between graduate assistants in Life System and Nonlife System sciences for each of three classification levels and among six categories of hours worked per week.

H₀₄: There is no difference in job satisfaction between graduate assistants in Hard and Soft sciences for each of three classification levels and among six categories of hours worked per week.

H₀₅: There is no difference in job satisfaction between graduate assistants in Pure and Applied sciences for each of three classification levels and among six categories of hours worked per week.

- H_{06} : There is no difference in job satisfaction between graduate assistants in Life System and Nonlife System sciences for each of three classification levels and among six categories of hours worked per week.
- H_{07} : There is no difference in supervision from faculty between graduate assistants in Hard and Soft sciences for each of three classification levels and among six categories of hours worked per week.
- H_{08} : There is no difference in supervision from faculty between graduate assistants in Pure and Applied sciences for each of three classification levels and among six categories of hours worked per week.
- H_{09} : There is no difference in supervision from faculty between graduate assistants in Life System and Nonlife System sciences for each of three classification levels and among six categories of hours worked per week.

Analysis of Variance (ANOVA) was used to test the nine subhypotheses. In order to test for each of the three classification levels (GA, GTA, GRA), each subhypothesis was analyzed three times for a total of 27 separate ANOVA summary tables. Table 33 summarizes the results of the ANOVAS. The primary hypothesis, H_0 , was tested using discriminant analysis. Each of the three department classification schemes (Hard/Soft, Pure/Applied, and Life System/Nonlife System) was analyzed separately in order to determine group differences within the variables tested in this study. The results of the discriminant analysis are shown in Tables 34, 35 and 36.

Findings of the Study

Based upon the statistical analyses applied to the data collected in this study, the following results were found:

1. Subhypotheses H_{01} , H_{02} , and H_{03} were concerned with the relationship of the variables, Science 1 (Hard/Soft), Science 2 (Pure/Applied), Science 3 (Life System/Nonlife System), and hours worked per week, in predicting preference for teaching or research. For all classifications of graduate assistantships, graduate students in the Hard sciences preferred research activities to teaching activities. The Science 1 (Hard and Soft sciences) variable was statistically significant in predicting preference for teaching or research (PREF).
2. Subhypotheses H_{04} , H_{05} , and H_{06} were exploring the relationship of the variables Science 1 (Hard/Soft), Science 2 (Pure/Applied), Science 3 (Life System/Non-life System), and hours worked per week, in predicting the job satisfaction of graduate assistants as measured by the questionnaire items in the study. Graduate Assistants (GAs) in the Applied sciences noted greater job satisfaction than GAs in the Pure sciences. No other classification of academic departments was statistically significant in predicting job satisfaction.

3. Supervision from departmental faculty was a third variable measured in the study. Subhypotheses H_{07} , H_{08} and H_{09} were concerned with the relationship of the variables, Science 1 (Hard/Soft), Science 2 (Pure/Applied), and Science 3 (Life System/Nonlife System), and hours worked per week, in predicting satisfaction with departmental supervision. GAs in Pure sciences and Nonlife System sciences were more satisfied with the supervision provided them than were GAs in Applied sciences and Life System sciences. In looking at group means for graduate assistants of all classification levels, the satisfaction with supervision was quite low. Of the three groups of graduate assistants (GAs, GTAs, and GRAs) among all science categories, no group achieved a mean value close to 12, an average response. There seems to be a need for more supervision from faculty within all academic departments.
4. Hours worked per week was not a conclusive variable in predicting academic task preferences, job satisfaction, or satisfaction with supervision from departmental faculty. With the exception of GTAs in the Hard/Soft configuration in two instances, hours worked per week was only significant for GAs in the Pure/Applied and Life System/Nonlife System sciences when job satisfaction and supervision levels were being

predicted. Hours worked per week was significant in predicting job satisfaction among GAS regardless of the science classification. Generally, those GAS working 13 hours or less per week were the most satisfied with their jobs. Those GAS in the Pure/Applied or Life System/Nonlife System sciences working 13 hours a week or less were the most satisfied with supervision received from departmental faculty.

5. The primary hypothesis, H_0 , was concerned with the ability of the variables chosen for this study to predict group membership within the departmental classifications of Hard and Soft sciences, Pure and Applied sciences, and Life System and Nonlife System sciences. Discriminant analysis was used to determine if group membership within academic department classifications could be accurately predicted by the variables of preference, supervision, job satisfaction and hours worked per week used in this study. It was found that group membership in either Hard and Soft or Pure and Applied sciences could be predicted at a level equal to or higher than the 67% criterion set. The Life System/Nonlife System sciences could be accurately grouped approximately 60% of the time. In the discriminant analysis, supervision, hours worked per week, and Item 23 (I am supervised in my teaching by a

faculty member who provides me with regular . . . feedback.) were common to all group membership selections. Preference for teaching or research was successful in helping predict membership in the Hard and Soft or Pure and Applied science categories.

6. With the exception of the strong preference for research shown by graduate assistants of all classifications within the Hard sciences, the GA classification was the source of most of the other statistically significant findings. There are several possible explanations for this.

- a) First of all, the GA classification was the largest of the three possible classifications of graduate assistantships. GAs numbered 305, GTAs numbered 83, and GRAs numbered 40. The results may have been more conclusive because of the larger numbers of GAs.
- b) Secondly, the GTA and GRA classifications may be so specific that differences between academic departments were not discernible.
- c) Thirdly, graduate students placed in GRA and GTA positions may be placed on

the basis of their workload preferences, negating any differences in this study.

Implications of the Findings

Based on the findings of this study, the following implications for the employment of graduate assistants are suggested:

1. Graduate assistants gave responses similar to faculty in the Biglan (1971) study. Those findings were:
 - a) Faculty in Hard sciences preferred research, those faculty in Soft sciences preferred teaching. Graduate assistants indicated the same preferences by type of department.
 - b) Faculty in Applied sciences preferred working with more people. GAs in the Applied sciences indicated the need for greater contact in the form of supervision than they were receiving.
 - c) Faculty in Life System sciences preferred working with more people. Similarly, graduate assistants in Life System sciences indicated a greater

need for supervision (contact with others) than they were receiving.

It would appear that some of the same preferences and needs expressed by faculty in the Biglan (1971) study also apply to graduate assistants.

2. With the strong preference for research expressed by graduate students in the Hard sciences and the strong preference for teaching expressed by graduate students in Soft sciences, it may be suggested that the method of assigning assistantship duties should be revised.

- a) For those graduate students employed 1/2 time (20 hours per week) a combination of teaching and research activities might be assigned. The work of the university would continue and graduate students would have an opportunity to perform some tasks they enjoyed.

- b) For graduate assistants employed 1/4 or 1/3 time (10 and 13 hours per week, respectively), the length of the assistantship might be guaranteed for two semesters but duties changed each semester.

- c) A disadvantage of both suggestions is the loss of continuity so often necessary in both research and teaching.

Faculty within the departments would certainly need to spend more time supervising graduate assistants and coordinating research and teaching efforts among many graduate assistants if continuity were not to be lost.

3. Job satisfaction was measured by the responses to questions regarding salary, office space, and workload/courseload. The only groups for which there were significant differences in job satisfaction were GAs in Pure and Applied sciences. GAs in Pure sciences were not as satisfied with their jobs as were those in Applied sciences. Administrators and faculty within Pure science departments might investigate workloads, salary, and office space issues within their departments to determine what improvements could be made.
4. A problem appeared to exist across all departments regardless of categorization and across all graduate assistantship classifications. Graduate students working as graduate assistants are not receiving the amount of supervision they would like to receive. Possible causes should be investigated. Regardless of

the cause, administrators should encourage faculty members to spend more time supervising graduate assistants.

5. When hours worked per week was significant, those graduate assistants working 13 hours per week or less indicated the most positive responses. Graduate assistants reported working a large range of hours per week. The range was from 0 to 120 hours per week. If faculty were supervising graduate assistants more closely, graduate students might be encouraged to work realistic numbers of hours per week. Certainly, the expectations are too great if graduate assistants are spending over 40 hours per week working at their assistantship duties in addition to coursework and personal needs. Every effort should be made to make realistic workload assignments to graduate assistants and graduate assistants should be encouraged to set realistic goals for themselves.
6. The results of the study may have been skewed due to the large numbers of GAs and few GTAs and GRAs. According to Graduate School guidelines (see Appendix A), only beginning graduate students with less than 30 graduate semester hours should be appointed as GAs. It would appear that many academic departments

were using the GA classification regardless of the progress a graduate student was making toward completion of a graduate degree. All administrators, faculty, and graduate students should be made aware of the Graduate School guidelines.

Recommendations for Future Research

Based on the findings of this study and their implications, research in the following areas is needed:

1. The findings with regard to graduate assistants showed some similarities with Biglan's (1971) study of faculty. However, more research needs to be conducted with graduate assistants to determine other task preferences and additional information about workloads.
2. The Life System/Nonlife System sciences classification remains a difficult one to predict. None of the variables used in this study were able to accurately predict group membership at the criterion level set. Biglan (1971) was unable to predict this categorization as accurately as the others, also. Future research should attempt to identify variables that would adequately identify members of Life System/Nonlife System academic departments.

3. The variable, hours worked per week, was used as a total hours figure in this study. Another interesting research study might look at the amount of time spent in various job-related activities. Biglan had found that faculty did spend more time at some activities than others. It would be interesting to find out if graduate assistants spend additional time on the same types of activities.
4. A follow-up study in three to five years would be of interest. If changes were made in assistantship duties, supervision, hours worked per week, or GA classifications, a follow-up study might show improvement in those areas. If changes were not made, a follow-up study would still be important to see if graduate assistants had changed response patterns from those shown in this study.
5. Research should be conducted to attempt to classify departments not included in this study as to the Hard/Soft, Pure/Applied, or Life System/Nonlife System sciences categories. Thirty-four departments were studied in this research project. There are over 120 academic departments at the University of Florida.

6. The research study should be replicated on other university campuses. Only with repeated research would the results of this study be verified or negated, thereby increasing our knowledge of graduate student workloads.

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APPENDIX A

MEMORANDA REGARDING GRADUATE ASSISTANTS
AT THE UNIVERSITY OF FLORIDA

UNIVERSITY OF FLORIDA

GAINESVILLE, 32611



THE GRADUATE SCHOOL &
THE DIVISION OF SPONSORED RESEARCH
Office of the Dean & Director

July 9, 1981

223 G Street, N.E.
904 392-4545

MEMORANDUM

TO: Deans, Directors, Department Chairpersons, Graduate Coordinators, and Graduate Faculty

FROM: Madelyn M. Lockhart, Associate Dean for Graduate Studies

RE: STIPENDS FOR GRADUATE STUDENT APPOINTMENTS FOR 1981-82

<u>Graduate Assistant</u>	<u>9 Months Minimum</u>	<u>Bi-Weekly Rate Minimum</u>
1/4 time	\$2,925	\$150.00
1/3 time	\$3,900	\$200.00
1/2 time	\$5,850	\$300.00
Graduate Fellows	\$4,875	\$250.00

The above minimum stipend rates have been established for 1981-82. The minimum rate is increased in each graduate assistant category to more adequately compensate graduate students who provide service to the University. Maximum rates have been removed in all categories to provide greater departmental flexibility. The actual stipends paid will continue to be the responsibility of the department chairperson and will depend upon funds available. The regulations of the Graduate School stipulate that any graduate students on appointment shall not hold another remunerative position. All graduate student appointments must be approved by the Graduate School.

Graduate Assistants

Beginning graduate students should be appointed as Graduate Assistants.

Graduate Research Assistant and Graduate Teaching Assistant

These appointments are to be reserved for advanced graduate students who have completed a minimum of 30 semester hours of graduate work toward a graduate degree. The appointment should involve an increase in stipend and responsibility over that of a graduate assistant.

Graduate Research Associate and Graduate Teaching Associate

These appointments should be granted only to students who have completed most of the work required for the doctorate. It should carry a stipend and responsibility above that of the Graduate Research Assistant and Graduate Teaching Assistant.

PERCENTAGE OF TIME: The percentage of full-time employment is fixed for a Graduate Assistant as indicated above, but Graduate Research or Teaching Assistants or Associates may be appointed for any percentage of time required by their work assignment and in agreement with their academic registration and rate of pay. Graduate student appointments on a full-time basis are discouraged since they would delay the students' progress toward their degrees.

UNIVERSITY OF FLORIDA

GAINESVILLE 32611



THE GRADUATE SCHOOL &
THE DIVISION OF SPONSORED RESEARCH
Office of the Dean & Director

July 9, 1981

223 Grimmer Hall
904 392-4646

MEMORANDUM

TO: Deans, Directors, Department Chairpersons, Graduate Coordinators, and Graduate Faculty

FROM: Madelyn M. Lockhart, Associate Dean for Graduate Studies

RE: GRADUATE ASSISTANTSHIPS: TIME COMMITMENTS AND MINIMUM RATES

1. One-Fourth-Time Assistantships provide a minimum stipend of \$2,925 for 9 months. Normally, assigned duties will not exceed 4 classroom contact hours or 6 laboratory contact hours per week. Total assigned duties, including preparation (for the average assistant), grading, staff meetings, student consultation, required lecture attendance or research duties not directly related to student's thesis or dissertation will not average more than 10 hours per week over the period of the appointment.
2. One-Third-Time Assistantships provide a minimum stipend of \$3,900 for 9 months. Normally, assigned duties will not exceed 6 classroom contact hours or 9 laboratory contact hours. Total assigned duties including preparation (for the average assistant), grading, staff meetings, student consultation, required lecture attendance or research duties not directly related to student's thesis or dissertation will not average more than 13-1/3 hours per week over the period of the appointment.
3. One-Half-Time Assistantships provide a minimum stipend of \$5,850 for 9 months. Normally, assigned duties will not exceed 9 classroom contact hours or 12 laboratory contact hours. Total assigned duties including preparation (for the average assistant), grading, staff meetings, student consultation, required lecture attendance or research duties not directly related to student's thesis or dissertation will not average more than 20 hours per week over the period of the appointment.

To the extent possible, the student should be informed in writing at the beginning of his/her appointment what services he/she is expected to render as a graduate assistant. It should be made clear whether or not the student will be expected to render service during the breaks between semesters.

APPENDIX B

COVER LETTER, QUESTIONNAIRE
ANSWER SHEET, REMINDER LETTER

UNIVERSITY OF FLORIDA

GAINESVILLE, 32611



THE GRADUATE SCHOOL &
THE DIVISION OF SPONSORED RESEARCH
Office of the Dean & Director

223 G-11-10-11
904 397-4646

October 26, 1981

Dear Graduate Assistant:

Enclosed please find a questionnaire regarding your opinions and needs as you perform the various duties assigned to you as a graduate assistant. The information you provide in answering the questionnaire will be tabulated to give an overall picture of graduate assistants on the University of Florida (U.F.) campus. Department chairpersons will be receiving a similar questionnaire but it will be directed more towards departmental practices regarding the work loads of graduate assistants.

This questionnaire is part of a study sponsored by the U.F. Graduate School to find out what kinds of assistance graduate students may need to fulfill their teaching and other assigned duties. Your confidentiality in responding to this questionnaire will be protected to the extent provided by law. A copy of the final report summarizing the results of this survey will be placed on reserve in Library West.

Your response is important! If this study is to really be helpful we need a 100% response. Please help us by taking 10 to 20 minutes to answer the questionnaire.

Please return both your questionnaire and completed answer sheet, in the enclosed campus mail envelope, by November 3, 1981.

Thank you for your prompt attention to this important survey.

Sincerely,

A handwritten signature in cursive script, reading "Francis G. Stehli".

Francis G. Stehli
Dean for Graduate
Studies & Research

GRADUATE ASSISTANTS' QUESTIONNAIRE

DIRECTIONS: In responding to this questionnaire, please use the attached NCS Answer Sheet and a #2 black, lead pencil. To answer, find the numbered row on the answer sheet that corresponds with the question. Choose one answer per item. Make heavy black marks that fill the circle completely. Erase completely any answer you wish to change. Please do not write in your name, change our special code, or make any stray marks on the answer sheet.

Return both your questionnaire and completed answer sheet, in the addressed envelope provided, to Graduate School, 223 Grinter Hall by November 3, 1981.

Throughout this questionnaire "graduate assistant" refers to all classifications of graduate assistantships and is abbreviated "GA".

Part A: DEMOGRAPHIC DATA

Mark the best response for each item, #1-11, on your answer sheet.

1. Sex: a. Male
b. Female
2. Age: a. 25 or under
b. 26-30
c. 31-35
d. 36-40
e. 41 or over
3. Highest degree earned:
 - a. B.A., B.S., B.F.A.
 - b. M.A., M.S., M.A.T., M.F.A., M.B.A.
 - c. Ed.D.
 - d. Ph.D.
 - e. Other (please specify): _____
4. Degree sought:
 - a. M.A., M.S., M.A.T., M.F.A., M.B.A.
 - b. Ed.S.
 - c. Ed.D.
 - d. Ph.D.
 - e. Other (please specify): _____
5. How many credits are you enrolled in this term?
 - a. 3 or less credits
 - b. 4-6 credits
 - c. 7-8 credits
 - d. 9-11 credits
 - e. 12 or more credits

(continue on back side)

6. Before beginning graduate work at U.F., how many years of teaching experience did you have?
- Part-time or substitute teaching, 3 years or less
 - Part-time or substitute teaching, 4 years or more
 - Full-time teaching, 3 years or less
 - Full-time teaching, 4 years or more
 - none
7. How many class sections are you teaching at U.F. this term? ('Teaching' refers to partial or sole responsibility for one or more lecture, laboratory or recitation/discussion sections.)
- 1
 - 2
 - 3
 - 4 or more
 - none

IF YOUR ANSWER TO QUESTION #7 is NONE, GO DIRECTLY to PART B, Question #12.

8. How many students are you teaching this term (combined total for all class sections)?
- 15 or less
 - 16-49
 - 50-99
 - 100-149
 - 150 or more
9. Most of the students I am teaching this term are classified as:
- Freshmen
 - Sophomores
 - Juniors
 - Seniors
 - Graduate students
10. What type(s) of class(es) are you teaching this term?
- Lecture
 - Laboratory
 - Lecture/Laboratory combination
 - Recitation (discussion)
 - Field Study
11. How many terms have you taught at U.F.?
- This is my first term.
 - 2-3 terms
 - 4-5 terms
 - 6-7 terms
 - More than 7 terms

Part B: ATTITUDES TOWARD ASSIGNED WORKLOAD

Please respond to each of the following items (#12-24) using the following rating categories:

Strongly agree	Agree	Disagree	Strongly Disagree	Undecided
a	b	c	d	e

Mark the best answer for each item on your answer sheet.

12. If given a choice, I prefer research to teaching.
 13. I enjoy teaching.
 14. I hope to pursue a career in college teaching.
 15. Undergraduate students prefer teachers who are GAs rather than full-time faculty members.
 16. Undergraduate students are more demanding of teachers who are GAs than full-time faculty members.
 17. My assigned work load as a GA is appropriate in relation to my present course load.
 18. My salary as a GA is fair.
 19. I have adequate office space.
- IF YOU ARE NOT TEACHING THIS TERM, GO DIRECTLY TO PART C, Question #25.
20. I was given adequate time before classes began to prepare for my teaching assignment.
 21. I teach from materials (e.g., texts, handouts) selected by a full-time faculty member.
 22. Departmental faculty are helpful in assisting me in organizing and teaching my classes.
 23. I am supervised in my teaching by a faculty member who provides me with regular (weekly or biweekly) feedback.
 24. My department provides me with basic information (e.g., how to order equipment, score tests, print materials) to help me carry out my teaching assignment.

(continue on back side)

Part C: TEACHING SKILLS

Please mark the answer sheet for items #25-37 using the following rating categories:

- a. Interest only if credit received
- b. Interested
- c. Already skilled
- d. Not interested

What interest do you have in learning about the following topics?

- 25. Meeting a class for the first time.
- 26. Planning course content
- 27. Planning course requirements and student assignments.
- 28. Using audio-visual equipment.
- 29. Leading discussions
- 30. Lecturing
- 31. Laboratory teaching
- 32. Using modules (learning units) and contracts
- 33. Using instructional games
- 34. Individualized instruction
- 35. Constructing and grading tests
- 36. Determining student grades
- 37. More content in my academic discipline

Part D: INSTRUCTIONAL FORMAT

Please mark the answer sheet per items #38-43 using the following rating categories:

- a. Interested only if credit received
- b. Interested
- c. Department currently provides this activity
- d. Not interested

Indicate your interest in participating in the following teaching improvement activities:

- 38. Having my teaching videotaped for review by a faculty member and myself.
- 39. Having my teaching critiqued by a fellow graduate student.
- 40. Having my teaching critiqued by a supervising faculty member.
- 41. Reading and discussing a text about college teaching.
- 42. Attending an information session on support services available to all teachers on the U.F. campus.
- 43. Reading research articles about college teaching.

Using the following rating categories for items #44-52:

- a. Interested only if credit received or all costs paid
- b. Interested
- c. Department currently provides this activity
- d. Not interested

Indicate your interest in attending these activities for the purpose of improving your teaching skills or learning more about college teaching.

- 44. Weekend retreat
- 45. 1/2 day orientation meeting at the beginning of the term.
- 46. 1 or 2 day seminar before classes begin.
- 47. Week-long session before classes begin.
- 48. Independent study (working alone with a faculty member).
- 49. Supervised practicum in college teaching.
- 50. Credit course about college teaching.
- 51. Continuing education (non-credit) course in college teaching.
- 52. Mini-course (4 seminar meetings during a term).

Part E: SELECTION AND EVALUATION

Answer items #53-55 as indicated. Choose the best answer for each item.

- 53. My assistantship for this term is officially classified as:
 - a. 1/4 time
 - b. 1/3 time
 - c. 1/2 time
 - d. 3/4 time
 - e. Full-time
- 54. I was selected as a GA in my department primarily on the basis of:
 - a. financial need
 - b. previous academic record
 - c. previous teaching or employment experience
 - d. application for employment
 - e. knowledge of departmental faculty
- 55. Answer only if teaching this term:
 I am evaluated for the teaching I do in my department primarily on the basis of:
 - a. Classroom visitation by department faculty member
 - b. Student ratings
 - c. Informal student feedback
 - d. Evaluations by other graduate students
 - e. I am not evaluated.

(continue on back side)

56. Describe in HOURS your WEEKLY WORKLOAD as a GA for the current term. Hours listed should only be those devoted to your assigned assistantship responsibilities. Place the appropriate number of hours in the blanks provided below.

Classroom teaching	_____	hours
Laboratory teaching or supervision	_____	hours
Preparation time for teaching	_____	hours
Grading and evaluating student work	_____	hours
Required office hours	_____	hours
Assigned Research activity	_____	hours
Other Research activity	_____	hours
Other (please specify) _____	_____	hours
_____	_____	hours
_____	_____	hours

COMMENTS (optional): Please provide any comments regarding your work as a graduate assistant that you would like to share. Your confidentiality in responding will be protected to the extent provided by law.

Thank you for your assistance. Please return both your questionnaire and completed answer sheet, in the addressed envelope provided, to Graduate School, 223 Grinter Hall by November 3, 1981.

UNIVERSITY OF FLORIDA

GAINESVILLE

LAST NAME										FI	MI
O	O	O	O	O	O	O	O	O	O	O	O
A	A	A	A	A	A	A	A	A	A	A	A
B	B	B	B	B	B	B	B	B	B	B	B
C	C	C	C	C	C	C	C	C	C	C	C
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H	H	H	H	H	H	H	H	H	H	H	H
I	I	I	I	I	I	I	I	I	I	I	I
J	J	J	J	J	J	J	J	J	J	J	J
K	K	K	K	K	K	K	K	K	K	K	K
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R	R	R	R	R	R	R	R	R	R	R	R
S	S	S	S	S	S	S	S	S	S	S	S
T	T	T	T	T	T	T	T	T	T	T	T
U	U	U	U	U	U	U	U	U	U	U	U
V	V	V	V	V	V	V	V	V	V	V	V
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X	X	X	X	X	X	X	X	X	X	X	X
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

SOCIAL SECURITY NO.

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9	9	9	9	9	9	9	9	9	9

SECTION

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4	4	4	4	4
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8	8	8	8	8
9	9	9	9	9

SPECIAL
CODES

1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0

TEST FORM CODE: (A)(B)(C)(D)(E)

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7	1	2	3	4	5	47	1	2	3	4	5
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10	1	2	3	4	5	50	1	2	3	4	5
A	B	C	D	E	A	B	C	D	E		
11	1	2	3	4	5	51	1	2	3	4	5
12	1	2	3	4	5	52	1	2	3	4	5
13	1	2	3	4	5	53	1	2	3	4	5
14	1	2	3	4	5	54	1	2	3	4	5
15	1	2	3	4	5	55	1	2	3	4	5
16	1	2	3	4	5	56	1	2	3	4	5
17	1	2	3	4	5	57	1	2	3	4	5
18	1	2	3	4	5	58	1	2	3	4	5
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20	1	2	3	4	5	60	1	2	3	4	5
A	B	C	D	E	A	B	C	D	E		
21	1	2	3	4	5	61	1	2	3	4	5
22	1	2	3	4	5	62	1	2	3	4	5
23	1	2	3	4	5	63	1	2	3	4	5
24	1	2	3	4	5	64	1	2	3	4	5
25	1	2	3	4	5	65	1	2	3	4	5
26	1	2	3	4	5	66	1	2	3	4	5
27	1	2	3	4	5	67	1	2	3	4	5
28	1	2	3	4	5	68	1	2	3	4	5
29	1	2	3	4	5	69	1	2	3	4	5
30	1	2	3	4	5	70	1	2	3	4	5
A	B	C	D	E	A	B	C	D	E		
31	1	2	3	4	5	71	1	2	3	4	5
32	1	2	3	4	5	72	1	2	3	4	5
33	1	2	3	4	5	73	1	2	3	4	5
34	1	2	3	4	5	74	1	2	3	4	5
35	1	2	3	4	5	75	1	2	3	4	5
36	1	2	3	4	5	76	1	2	3	4	5
37	1	2	3	4	5	77	1	2	3	4	5
38	1	2	3	4	5	78	1	2	3	4	5
39	1	2	3	4	5	79	1	2	3	4	5
40	1	2	3	4	5	80	1	2	3	4	5

UNIVERSITY OF FLORIDA
GAINESVILLE, 32611

THE GRADUATE SCHOOL &
THE DIVISION OF SPONSORED RESEARCH
Office of the Dean & Director



223 Grinter Hall
904 392-4646

November 5, 1981

Dear Graduate Assistant:

A week ago you should have received a "Graduate Assistants' Questionnaire" concerning your needs as you fulfill the duties assigned to you as a graduate assistant. Your response to this questionnaire is needed to give our study a true picture of graduate assistants and their work on the University of Florida campus.

If you have already responded, thank you for your participation. If you have not responded, please take 10 to 15 minutes to complete the questionnaire. An addressed, campus mail return envelope was included with the questionnaire in the original mailing. Your confidentiality in responding to the questionnaire will be protected to the full extent of the law.

Your response is important! Please complete the questionnaire and return both the questionnaire and answer sheet to 223 Grinter Hall, U.F., by November 12.

Thank you for your assistance.

Sincerely,

A handwritten signature in cursive script, appearing to read "Francis G. Stehli".

Francis G. Stehli
Dean for Graduate
Studies & Research

FGS:mfb

APPENDIX C

PILOT STUDY

COVER LETTER, QUESTIONNAIRE, REMINDER LETTERS

UNIVERSITY OF FLORIDA
GAINESVILLE, 32611



THE GRADUATE SCHOOL &
THE DIVISION OF SPONSORED RESEARCH
Office of the Dean & Director

223 (Rev. 11-80)
904 352-4646

October 6, 1981

Dear Graduate Assistant:

Enclosed please find a questionnaire regarding your opinions and needs as you perform the various duties assigned to you as a graduate assistant. The information you provide in answering the questionnaire will be tabulated to give an overall picture of graduate assistants on the University of Florida (U.F.) campus. Department chairpersons will be receiving a similar questionnaire but it will be directed more towards departmental practices regarding the work loads of graduate assistants.

Your response is important! If this study is to really be helpful we need a 100% response. Please help us by taking 10 to 20 minutes to answer the questionnaire.

This questionnaire is part of a study sponsored by the U.F. Graduate School to find out what kinds of assistance graduate students may need to fulfill their teaching and other assigned duties. Your confidentiality in responding to this questionnaire will be protected to the extent provided by law. A copy of the final report summarizing the results of this survey will be placed on reserve in Library West.

Please return both your questionnaire and completed answer sheet, through campus mails, by October 13, 1981. An addressed, campus mail envelope has been provided.

Thank you for your prompt attention to this important survey.

Sincerely,

A handwritten signature in dark ink, appearing to read "Francis G. Stehl".

Francis G. Stehl
Dean for Graduate
Studies and Research

GRADUATE ASSISTANTS' QUESTIONNAIRE

DIRECTIONS: In responding to this questionnaire, please use the attached NCS Answer Sheet and a #2 black, lead pencil. To answer, find the numbered row on the answer sheet that corresponds with the question. Choose one answer per item. Make heavy black marks that fill the circle completely. Erase completely any answer you wish to change. Make no stray marks on the answer sheet, do not write in your name.

Return both your questionnaire and completed answer sheet, in the addressed envelope provided, to: Graduate School, 223 Grinter hall by October 13, 1981.

Throughout this questionnaire "graduate assistant" refers to all classifications of graduate assistantships and is abbreviated "GA".

Part A: DEMOGRAPHIC DATA

Mark the best response for each item, #1-11, on your answer sheet.

1. Sex: a. Male
 b. Female
2. Age: a. 25 or under
 b. 26-30
 c. 31-35
 d. 36-40
 e. 41 or over
3. Highest degree earned:
 a. B.A., B.S.
 b. M.A., M.S., M.A.T., M.F.A.
 c. Ed.D.
 d. Ph.D.
 e. Other (please specify): _____
4. Degree sought:
 a. M.A., M.S., M.A.T., M.F.A.
 b. Ed.S.
 c. Ed.D.
 d. Ph.D.
 e. Other (please specify): _____
5. How many credits are you enrolled in this term?
 a. 3 or less credits
 b. 4-6 credits
 c. 7-8 credits
 d. 9-11 credits
 e. 12 or more credits

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6. Before beginning graduate work at U.F., how many years of teaching experience did you have?
- Part-time or substitute teaching, 3 years or less
 - Part-time or substitute teaching, 4 years or more
 - Full-time teaching, 3 years or less
 - Full-time teaching, 4 years or more
 - none
7. How many class sections are you teaching at U.F. this term?
- 1
 - 2
 - 3
 - 4 or more
 - none

IF YOUR ANSWER TO QUESTION #7 is NONE, GO DIRECTLY to PART B, Question #12.

8. How many students are you teaching this term (combined total for all class sections)?
- 15 or less
 - 16-49
 - 50-99
 - 100-149
 - 150 or more
9. Most of the students I am teaching this term are classified as:
- Freshmen
 - Sophomores
 - Juniors
 - Seniors
 - Other (please specify): _____
10. What type(s) of class(es) are you teaching this term?
- Lecture
 - Laboratory
 - Recitation (discussion)
 - Field Study
 - Other (please specify): _____
11. How many terms have you taught at U.F.?
- This is my first term.
 - 2-3 terms
 - 4-5 terms
 - 6-7 terms
 - More than 7 terms

Part B: ATTITUDES TOWARD ASSIGNED WORKLOAD

Please respond to each of the following items (#12-24) using the following rating categories:

Strongly agree	Agree	Disagree	Strongly Disagree	Undecided
a	b	c	d	e

Mark the best answer for each item on your answer sheet.

12. If given a choice, I prefer research to teaching.
13. I enjoy teaching.
14. I hope to pursue a career in college teaching.
15. Undergraduate students prefer teachers who are GAs rather than full-time faculty members.
16. Undergraduate students are more demanding of teachers who are GAs than full-time faculty members.
17. My assigned work load as a GA is appropriate in relation to my present course load.
18. My salary as a GA is fair.
19. I have adequate office space.

IF YOU ARE NOT TEACHING THIS TERM, GO DIRECTLY TO PART C, Question #25.

20. I was given adequate time before classes began to prepare for my teaching assignment.
21. I teach from materials (e.g., texts, handouts) selected by a full-time faculty member.
22. Departmental faculty are helpful in assisting me in organizing and teaching my classes.
23. I am supervised in my teaching by a faculty member who provides me with regular (weekly or biweekly) feedback.
24. My department provides me with basic information (e.g., how to order equipment, score tests, print materials) to help me carry out my teaching assignment.

(continue on back side)

Part C: TEACHING SKILLS

Please mark the answer sheet for items #25-37 using the following rating categories:

- a. Interest only if credit received
- b. Interested
- c. Already skilled
- d. Not interested

What interest do you have in learning about the following topics?

- 25. Meeting a class for the first time.
- 26. Planning course content
- 27. Planning course requirements and student assignments.
- 28. Using audio-visual equipment.
- 29. Leading discussions
- 30. Lecturing
- 31. Laboratory teaching
- 32. Using modules (learning units) and contracts
- 33. Using instructional games
- 34. Individualized instruction
- 35. Constructing and grading tests
- 36. Determining student grades
- 37. More content in my academic discipline

Part D: INSTRUCTIONAL FORMAT

Please mark the answer sheet per items #38-43 using the following rating categories:

- a. Interested only if credit received
- b. Interested
- c. Department currently provides this activity
- d. Not interested

Indicate your interest in participating in the following teaching improvement activities:

- 38. Having my teaching videotaped for review by a faculty member and myself.
- 39. Having my teaching critiqued by a fellow graduate student.
- 40. Having my teaching critiqued by a supervising faculty member.
- 41. Reading and discussing a text about college teaching.
- 42. Attending an information session on support services available to all teachers on the U.F. campus.
- 43. Reading research articles about college teaching.

Using the following rating categories for items #44-52:

- a. Interested only if credit received or all costs paid
- b. Interested
- c. Department currently provides this activity
- d. Not interested

Indicate your interest in attending these activities for the purpose of improving your teaching skills or learning more about college teaching.

- 44. Weekend retreat
- 45. 1/2 day orientation meeting at the beginning of the term.
- 46. 1 or 2 day seminar before classes begin.
- 47. Week-long session before classes begin.
- 48. Independent study (working alone with a faculty member).
- 49. Supervised practicum in college teaching.
- 50. Credit course about college teaching.
- 51. Continuing education (non-credit) course in college teaching.
- 52. Mini-course (4 seminar meetings during a term).

Part E: SELECTION AND EVALUATION

Answer items #53-55 as indicated. Choose the best answer for each item.

- 53. I was selected as a GA in my department primarily on the basis of:
 - a. financial need
 - b. previous academic record
 - c. previous teaching or employment experience
 - d. application for employment
 - e. knowledge of departmental faculty
- 54. Answer only if teaching this term:
I am evaluated for the teaching I do in my department primarily on the basis of:
 - a. Classroom visitation by department faculty member.
 - b. Student ratings
 - c. Informal student feedback
 - d. Evaluations by other graduate students
 - e. I am not evaluated.
- 55. My assistantship for this term is officially classified as:
 - a. 1/4 time
 - b. 1/3 time
 - c. 1/2 time
 - d. 3/4 time
 - e. Full-time

(continue on back side)

56. Describe in hours your assigned weekly workload as a GA for this current term. Place the appropriate numbers in the blanks provided on this questionnaire:

Classroom teaching _____ hours
 Laboratory teaching or supervision _____ hours
 Preparation time for teaching _____ hours
 Required office hours _____ hours
 Assigned Research activity _____ hours
 Other Research activity _____ hours
 Other (please specify) _____ hours

COMMENTS (optional): Please provide any comments regarding your work as a graduate assistant that you would like to share. Your confidentiality in responding will be protected to the extent provided by law.

Thank you for your assistance. Please return both your questionnaire and completed answer sheet, in the addressed envelope provided, to Graduate School, 223 Grinter Hall by October 13, 1981.

UNIVERSITY OF FLORIDA

GAINESVILLE

LAST NAME										FI	MI
O	O	O	O	O	O	O	O	O	O	O	O
P	P	P	P	P	P	P	P	P	P	P	P
B	B	B	B	B	B	B	B	B	B	B	B
C	C	C	C	C	C	C	C	C	C	C	C
D	D	D	D	D	D	D	D	D	D	D	D
E	E	E	E	E	E	E	E	E	E	E	E
F	F	F	F	F	F	F	F	F	F	F	F
G	G	G	G	G	G	G	G	G	G	G	G
H	H	H	H	H	H	H	H	H	H	H	H
I	I	I	I	I	I	I	I	I	I	I	I
J	J	J	J	J	J	J	J	J	J	J	J
K	K	K	K	K	K	K	K	K	K	K	K
L	L	L	L	L	L	L	L	L	L	L	L
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R	R	R	R	R	R	R	R	R	R	R	R
S	S	S	S	S	S	S	S	S	S	S	S
T	T	T	T	T	T	T	T	T	T	T	T
U	U	U	U	U	U	U	U	U	U	U	U
V	V	V	V	V	V	V	V	V	V	V	V
W	W	W	W	W	W	W	W	W	W	W	W
X	X	X	X	X	X	X	X	X	X	X	X
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

SOCIAL SECURITY NO.										SECTION			
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9	9	9	9	9	9	9	9	9	9	9	9	9	9

SPECIAL CODES	1	2	3	4	5	6	7	8	9	0
	1	2	3	4	5	6	7	8	9	0

TEST FORM CODE: A B C D E

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3	1	2	3	4	5	43	1	2	3	4	5
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6	1	2	3	4	5	46	1	2	3	4	5
7	1	2	3	4	5	47	1	2	3	4	5
8	1	2	3	4	5	48	1	2	3	4	5
9	1	2	3	4	5	49	1	2	3	4	5
10	1	2	3	4	5	50	1	2	3	4	5
11	1	2	3	4	5	51	1	2	3	4	5
12	1	2	3	4	5	52	1	2	3	4	5
13	1	2	3	4	5	53	1	2	3	4	5
14	1	2	3	4	5	54	1	2	3	4	5
15	1	2	3	4	5	55	1	2	3	4	5
16	1	2	3	4	5	56	1	2	3	4	5
17	1	2	3	4	5	57	1	2	3	4	5
18	1	2	3	4	5	58	1	2	3	4	5
19	1	2	3	4	5	59	1	2	3	4	5
20	1	2	3	4	5	60	1	2	3	4	5
21	1	2	3	4	5	61	1	2	3	4	5
22	1	2	3	4	5	62	1	2	3	4	5
23	1	2	3	4	5	63	1	2	3	4	5
24	1	2	3	4	5	64	1	2	3	4	5
25	1	2	3	4	5	65	1	2	3	4	5
26	1	2	3	4	5	66	1	2	3	4	5
27	1	2	3	4	5	67	1	2	3	4	5
28	1	2	3	4	5	68	1	2	3	4	5
29	1	2	3	4	5	69	1	2	3	4	5
30	1	2	3	4	5	70	1	2	3	4	5
31	1	2	3	4	5	71	1	2	3	4	5
32	1	2	3	4	5	72	1	2	3	4	5
33	1	2	3	4	5	73	1	2	3	4	5
34	1	2	3	4	5	74	1	2	3	4	5
35	1	2	3	4	5	75	1	2	3	4	5
36	1	2	3	4	5	76	1	2	3	4	5
37	1	2	3	4	5	77	1	2	3	4	5
38	1	2	3	4	5	78	1	2	3	4	5
39	1	2	3	4	5	79	1	2	3	4	5
40	1	2	3	4	5	80	1	2	3	4	5

UNIVERSITY OF FLORIDA
GAINESVILLE 32611



THE GRADUATE SCHOOL &
THE DIVISION OF SPONSORED RESEARCH
Office of the Dean & Director

225 Griffin Hall
904 392-4646

November 2, 1981

Dear Graduate Assistant:

Early in October you received a questionnaire concerning your needs as you fulfill the duties assigned to you as a graduate assistant. Your response to this questionnaire is important.

If you have already responded, thank you. If you have not, please take 10 minutes to complete the questionnaire. Another questionnaire, answer sheet, and return envelope have been included for your convenience.

I look forward to receiving your response to this questionnaire by November 9, 1981.

Sincerely,

A handwritten signature in cursive script, reading "Francis G. Stehli".

Francis G. Stehli
Dean for Graduate
Studies & Research

UNIVERSITY OF FLORIDA
GAINESVILLE, 32611



THE GRADUATE SCHOOL &
THE DIVISION OF SPONSORED RESEARCH
Office of the Dean & Director

223 Grinter Hall
904 392-4646

November 20, 1981

Dear Graduate Assistant:


In mid-October you received a questionnaire concerning your needs as a graduate assistant. To date I have not received your completed questionnaire. I would appreciate it very much if you would take 10-15 minutes now to complete this survey. (If you have misplaced the first letter and questionnaire that I sent to you, please call 392-4646 and leave your name and campus mailing address with my secretary. I will then have another questionnaire mailed to you.)

Your response is important! If this study is to really be helpful we need a 100% response. Please also be assured that your response will be held in the strictest of confidence. Your name will not appear on any reports resulting from this study.

Help save us the cost of having to correspond with you again. Please complete your questionnaire and return both your questionnaire and answer sheet to 223 Grinter Hall, U. F., by December 1, 1981.

Thank you for your assistance.

Sincerely,


Francis G. Stehli
Dean for Graduate
Studies and Research

BIOGRAPHICAL SKETCH

Susan T. Goodale was born January 11, 1947, in Shenandoah, Iowa. She graduated from Farragut High School, Farragut, Iowa, in 1965.

Ms. Goodale received the B.S. in textiles and clothing merchandising in 1969 and the M.S. in textiles and clothing in 1971. Both degrees were earned at Iowa State University, Ames, Iowa. Ms. Goodale also studied clothing and textiles at the University of North Carolina--Greensboro during the Fall semester, 1969.

From 1975 through 1981, Ms. Goodale taught adult education and was an instructor in clothing production and fashion retailing at Santa Fe Community College, Gainesville, Florida. She served as a Graduate Research Assistant in the Department of Instructional Leadership and Support during a portion of 1981. Ms. Goodale is currently Curriculum Development Specialist with the Community College of Aurora, Colorado.